

ENVIRONMENTAL JUSTICE AFTER HURRICANE
KATRINA: A DELPHI APPROACH TO DETERMINING
THE ETHICS AND FUTURE OF
PUBLIC HOUSING POLICIES
IN NEW ORLEANS

By

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CHAPTER I

INTRODUCTION

Environmental Justice

Historically, environmental justice (EJ) concerns have focused on the social injustices created when segments of the population do not have an equal share of both the benefits and burdens of environmental hazards. This research, with a strong foundation in the environmental science field, has focused on the marginalization of minorities and the poor as well as the impacts to health within these populations that are caused by environmental hazards (Friis, 2007).

Disaster Management

Simultaneously, disaster recovery literature has focused on improving the natural and social environment post disaster while agencies and individuals work to rebuild communities. Unfortunately, disaster recovery research indicates that it is again the minorities and the poor who are most adversely affected by natural disasters as they are often residing in areas of higher risk; furthermore, these populations often lack the resources and political power (or voice) held by other segments of the population (Peacock, Morrow, & Gladwin, 2000).

Public Health

In the field of public health, health equity (and the focus of environmental health in achieving health equity) has long been accepted as a part of the field. In fact, Colleges

of Public Health across the nation provide classes and offer emphasis in the study of environmental health. Public health threats are viewed as multifactorial issues that often include poverty, lack of education, and a myriad of other environmental concerns. Because environmental sociology seeks to study the “interaction between the environment and society” (Dunlap and Catton, 1994, p.5), and because public health addresses the prevention and control of disease as well as the overall promotion of health, it behooves the fields of environmental science, disaster recovery and public health to work in collaboration in response to environmental health issues. Such multidisciplinary partnership is embraced in each of these fields.

Overlap in Environmental Justice, Disaster Recovery and Public Health

One area of obvious overlap between the fields of environmental science, disaster recovery and public health involves issues of EJ. In a 1997 comment on environmental racism and public health in the *American Journal of Public Health*, Northridge and Shepard state that the, “EJ movement can profit from the experience of past public health campaigns ...” (Northridge and Shepard, 1997, p. 731). The authors point to public health campaigns that have led to positive action (including the “antismoking crusade”) and suggest that exposures that are “broad in scope ... require public health policy and action” (Northridge and Shepard, p. 731). Because environmental injustice (EIJ) is a multidimensional issue, it requires solutions that are multidimensional in nature as well. Public health models are designed to address complicated problems that do not have one simple solution. Furthermore, these models are designed to address the problem through all stages of prevention.

The term prevention, as it applies to public health, has three distinct categories. Primary prevention includes “actions and interventions designed to identify risks and reduce susceptibility or exposure to health threats prior to disease onset ...” (Wurzbach, 2004, p. 7). This is prevention in its truest form, and what laypersons think of when they use the word ‘prevention.’ Secondary prevention seeks to detect disease (or social problems) in its early stages and “prevent progress or recurrence” (Wurzbach, p. 7), while tertiary prevention is treatment. This process is cyclical, and thus it is possible to treat a problem (using tertiary prevention) and work to prevent further damage (secondary prevention) at the same time. Public health models seek to prevent disease and social problems by utilizing these various stages of prevention.

Multiple Solutions to a Multidimensional Issue

As in many public health problems, EIJ is complex and requires more than a simple solution. Problems such as these require action on multiple levels in order to adequately address this issue. A popular approach utilized in public health is the social ecological approach. This views health as a function of not only individuals, but of the multiple environments that individuals are involved with (Bartholomew, Parcel, Kok, and Gottlieb, 2001). These levels include: individual, interpersonal, organization, community, society, and supranation (Bartholomew, et al.). This approach “focuses on the interrelationships among individuals with biological, psychological, and behavioral characteristics and their environments” (Bartholomew, et al., p. 5). This also “allows for multiple influences” (Bartholomew, et al., p. 5).

Using this paradigm and looking again to recommendations found in EIJ literature, one can determine how this approach could be utilized to address EIJ. First of

all, the results of some studies showed the need for education at the individual and interpersonal level, while others called for organization and community response, and still others for policy change. Utilizing the social ecological approach, one would argue that it is not effective to do any one of these alone. Rather, it is best to address public health problems, such as EIJ, at multiple levels. Therefore, it is imperative that underserved individuals in the priority population who may not know where to obtain resources are educated about the process. By doing this, both secondary and tertiary prevention is provided. Secondly, community involvement is critical in order to call for action in areas that are disproportionately affected by EIJ. London's (2003) suggestion to involve union workers, women's leagues, and community groups fits into the community and organization levels, while her call for lobbying on environmental issues seeks to create change at the society (and possibly supranation) levels as policy, law, and even culture begin to change. Changes at this level may be both secondary and tertiary prevention as noted earlier; however, changes that involve the outer layers of the social ecological approach (supranation, society, etc.), often lead to primary prevention even when they are in response to current problems. When solutions to current problems are addressed through improved policies and laws, communities are able to move toward primary prevention of future problems of that kind.

Using a framework such as the social ecological model allows these activities to be done throughout society and decreases problems that occur with labeling communities as "environmental justice communities" and "non-environmental justice communities." By addressing the underlying issues of EIJ at multiple levels, experts are able to create a campaign (not unlike the tobacco free campaigns of the last few years) that heightens the

awareness of this problem while calling for individual, community and policy response. In addition to these changes, simply having these public discussions and shifts in policy promotes a shift in our culture, much like what has been observed in response to indoor smoking. If the culture embraces the need for change in the area of EIJ, primary prevention may be addressed at multiple levels.

It is difficult, if not impossible, to discuss vulnerable populations disproportionately affected by disasters without also discussing the problems of environmental injustice. Pastor, Bullard, Boyce, Fothergill, Morello-Frosch, and Wright (2006) focused on the environmental inequality in the New Orleans area, which was brought to light in the aftermath of Hurricane Katrina. Pastor and his colleagues called for a review of the environmental justice framework, which includes the following principles specific to vulnerable communities:

... to be protected from environmental degradation; prevention as the preferred ... strategy; the allocation of the burden of proof toward polluters; the need to redress disproportionate impact through targeted action and resources; [and] the idea that communities ‘speak for themselves’ (pp. 7-8).

The environmental justice framework also addresses the “distribution of benefits” (Pastor, et al., 2006, p. 17). Thus, access to public parks and transportation are also included. Awareness of those areas most affected by environmental injustice (such as lack of transportation in New Orleans) can help planners identify populations most at risk during a disaster as well as potential detriments to evacuation (Pastor, et al.). Such

knowledge can also aid in identifying areas where environmental injustice has occurred and present guidelines for improving those environmental and social conditions.

Statement of the Problem

This study served to determine the level of consensus (and dissensus) among experts in regard to the ethics of current public housing activities in New Orleans; experts were asked to predict future living situations among those individuals who were residing in public housing units in New Orleans prior to Hurricane Katrina and to note issues of environmental injustice among all residents in the area. The study centered on the public housing controversy taking place in New Orleans and the analysis of expert opinion regarding this controversy, utilizing the Delphi approach.

Purpose of the Study

For populations with few resources, the threat of disaster is greater than in others (Fothergill, Darlington, and Maestas, 1999). According to Parker (2000, p. 80), “disasters strike the poor especially hard, and it takes them longer than the rest of society to recover.” Therefore, it is imperative that environmental justice be addressed as a part of disaster recovery. Social inconsistencies, both in the United States and throughout the world, place disenfranchised populations at greater risk of harm during and after disaster. Disaster recovery that chooses to address housing issues long-term must also address sustainability and environmental justice issues among the policies and procedures that are created and followed.

The key goals of disaster recovery (sustainability and utilization of the community as an active participant throughout all processes) as outlined by the authors of *Holistic Disaster Recovery* (2001), are consistent with those found in the fields of public

health and environmental science. In order to succeed at long-term recovery, professionals and communities must recognize the need to address multidimensional problems with multidimensional solutions. Long-term sustainability and environmental justice are two areas of focus in addressing long-term disaster recovery. In determining the solutions for each community, members of the targeted population must be brought to the table. It is essential that the population served is also the population involved in planning for and recovering from disaster.

The results of this study may be beneficial in shaping the future policies and practices of the public housing arena in New Orleans. The conclusions of the study have the potential to be applied within the fields of environmental science, disaster recovery, and public health as professionals and community members strive to meet the needs of populations in poverty and achieve EJ.

Delimitations

This study has the following delimitations:

1. A historical review of documents was conducted as these documents were analyzed for content on public housing in New Orleans post Katrina. This study is therefore delimited to content in articles provided by Brookings Institution.

The Brookings Institution is a nonprofit public policy organization based in Washington, DC. [Its] mission is to conduct high-quality, independent research and, based on that research, to provide innovative, practical recommendations that advance three broad goals:

- Strengthen American democracy;

- Foster the economic and social welfare, security and opportunity of all Americans and
- Secure a more open, safe, prosperous and cooperative international system.

Brookings is proud to be consistently ranked as the most influential, most quoted and most trusted think tank (Brookings Institution, 2009, ¶ 1).

Brookings Institution provides articles specific to Hurricane Katrina in its *Katrina Reading Room* (Brookings Institution Katrina, 2009). The *Reading Room* is sponsored by *Living Cities, Inc.* which provides “collaboration with three other think tanks focused on the storm's aftermath: the Center on Budget and Policy Priorities, Initiative for a Competitive Inner City, and the Urban Institute” (¶ 1).

2. Perceptions regarding the ethics of current public housing policies in New Orleans as well as predictions regarding the future of public housing and recommendations for working toward environmental justice utilized the Delphi method. Key informants included New Orleans’ professionals and advocates in the areas of environmental law, public housing, community development, disaster recovery, and sociology.

Limitations of the Study

The research may be limited by the following:

1. Articles found in the Brookings Institution database provided the sample of articles on this topic. These articles were analyzed for content in order to

determine those topics that are central to the public housing controversy although articles were not included in this database for this sole purpose.

2. Key informants were limited to professionals and advocates in the field.
3. The study focused on one disaster recovery effort at one point in time. The time span included experts' insight into the history of public housing in New Orleans but focused on recovery efforts beginning in September 2005.

Assumptions

The following assumptions were made:

1. Articles found in the Brookings Institution database provide a representative sample of opinions and perspectives on public housing in New Orleans post Katrina.
2. Professionals and advocates spoke honestly and as representatives of the community.

Definitions

- *Delphi Technique*: a “group process that generates a consensus through a series of questionnaires” (Gilmore & Campbell, 2005, p. 67). This technique is often referred to as a Delphi approach or Delphi method.
- *Disaster Recovery*: Recovery is defined in the *Holistic Disaster Recovery* text as, “loosely related activities that occur before, during, and after a disastrous event” (2001, p. 2-1). Recovery, as outlined by the authors of *Holistic Disaster Recovery*, focuses on two major issues: sustainability and utilization of the community as a participant throughout all processes.

- *Environmental Justice* refers to the “equal treatment of all people in society irrespective of their racial background, country of origin, and socioeconomic status” (Friis, 2007, p. 65). According to the United States Environmental Protection Agency (EPA), environmental justice ensures that treatment is fair and that communities have “meaningful involvement” in the environmental decisions made in their area (EPA, 2006, ¶ 1). Friis makes the distinction that fairness essentially means that no group should bear a greater burden of environmental hazards. The EPA states that “all people [should] enjoy the same degree of protection from environmental and health hazards and equal access to the decision-making process to maintain a healthy environment in which to live, learn, and work” (¶ 3).
- *Environmental Injustice*: According to David Pellow (2000), experts in the field do not use terms such as environmental injustice consistently. Often times it is confused with environmental racism. Pellow clarifies, “An environmental injustice occurs when a particular social group – not necessarily a racial/ethnic group – is burdened with environmental hazards” (p. 582). Furthermore, the fight that takes place to improve the living situation of everyone is *the fight for* environmental justice. According to Pellow, this is accomplished when “... people can interact with confidence that the environment is safe, nurturing, and productive” (Pellow, p. 582).
- *FEMA*, the Federal Emergency Management Agency, became part of the United States Department of Homeland Security on March 1, 2003 (FEMA Mission, 2009).

The primary mission of the Federal Emergency Management Agency is to reduce the loss of life and property and protect the Nation from all hazards, including natural disasters, acts of terrorism, and other man-made disasters, by leading and supporting the Nation in a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation (FEMA Mission, 2009, ¶ 2).

The Robert T. Stafford Disaster Relief and Emergency Assistance Act was signed into law November 23, 1998, and amended the Disaster Relief Act of 1974. This act provides FEMA with “statutory authority for most Federal disaster response activities especially as they pertain to FEMA and FEMA programs” (FEMA Mission, 2009, ¶ 3).

- *Public Health* has at its core the focus on prevention rather than treatment and involves “the science and art of preventing disease, prolonging life and promoting physical health and efficiency through organized community efforts ... which will ensure every individual in the community a standard of living adequate for the maintenance of health ...” (Winslow, 1920).
- *Public housing*: Two types of public housing programs exist: “in one, the government owns housing and makes units available to needy people at low cost; in the other, commonly known as section 8, the government subsidizes the rental of privately owned housing that is rented to those in need” (Sugarman, 2008, ¶ 37).

- *Resident Management Corporations (RMCs)*: The purpose of RMCs are “to encourage increased resident management of public housing projects, as a means of improving existing living conditions ...” (Cornell University, n.d.).

CHAPTER II

REVIEW OF LITERATURE

In a study addressing environmental justice and its link to disaster and housing post disaster, it is important to first look at the differences between emergencies, disasters, and catastrophes. It is crucial to address perceptions of environmental justice, then housing issues for vulnerable populations post disaster. Finally, it is important to review the Delphi approach and its uses for a study such as this.

Emergencies, Disasters and Catastrophes

Quarantelli (2006) outlines the differences between the terms emergency, disaster, and catastrophe in an article posted by the Social Science Research Council (SSRC). Quarantelli's views of the distinctions between the terminologies come from years of research in the social science study of disasters.

Quarantelli (2006) notes that disasters differ from standard emergencies in that they are socially constructed events. Kamel and Loukaitou-Sideris (2004) point out that disasters are “essentially social phenomena” (p. 533). According to Quarantelli (2006), an emergency becomes a disaster when various organizations must work together toward recovery, “adjustment has to be made to losing autonomy and freedom of action” (§ 5), performance standards are adapted to address need on a large scale, and “there is a much closer than usual public and private interface” (whereby anyone may be subject to come under stricter government control) (§ 7). Quarantelli clarifies that the above distinction

between emergencies and disasters took years of research and debate in the field of emergency management.

A newer concept, according to Quarantelli (2006), is the distinction between disasters and catastrophes. Catastrophes are more than large scale disasters; they “require some different kinds of planning and managing than do even major disasters” (Quarantelli, ¶ 10). Hurricane Katrina’s impact is what Quarantelli refers to as “an almost textbook case of a catastrophe” (¶ 9).

Catastrophes differ from disasters in that in a catastrophe, “most or all of the community built structure is heavily impacted” (¶14), work roles become difficult or impossible to carry out even into the phase of disaster recovery, and aid from nearby communities is not possible as they too, are impacted by the event (Quarantelli, 2006). Furthermore, the services and functions of day-to-day community life are disrupted, national media coverage is substantial, and “the political arena becomes even more important” (¶ 27).

Quarantelli (2006) notes that an important distinction arises in that catastrophes force the public to examine “racial, class and ethnic differences that are papered over during routine times” (¶ 27). Such events also highlight weaknesses in governmental response programs such as FEMA and the Department of Homeland Security (DHS) (Quarantelli).

Cutter (2006) echoes this sentiment when she provides the following summation of the underlying issues brought to light following Hurricane Katrina:

The revelations of inadequate response to the hurricane’s aftermath are not just about failures in emergency response at the local, state, and federal

levels or failures in the overall emergency management system. They are also about failures of the social support systems for America's impoverished—the largely invisible inner city poor. The former can be rectified quickly (months to years) through organizational restructuring or training; the latter requires much more time, resources, and the political will to redress social inequities and inequalities that have been sustained for more than a half century and show little signs of dissipating (§ 2).

Gaps between the wealthy and poor as well as racial division affect the social environment within a community and create disparities that become apparent during catastrophe (Cutter, 2006).

EJ: The Problem of Perception

An issue when addressing EJ is the problem of perception. The perception of risks, as determined by the community, is often a subjective process. Likewise, even within a scientific framework, clearly defining communities where environmental injustice exists often proves difficult. For instance, the current system used by the Environmental Protection Agency (EPA) often identifies an area as being environmentally unjust if the community maintains that such an injustice exists. EPA documents “cannot offer managers a methodology for determining ‘actual’ EJ communities, because the EPA has no standard for calculating ‘disproportionate effects’” (Holifield, 2003, p. 291).

Perception of EIJ, and its risks, may differ between lay and scientific communities and even within them. The accepted notion of ‘self-identification’ as an EJ community (whereupon members of a community classify their locale as one in which social

injustice tied to an environmental issue is present) may serve to create further inequity between communities. As scarce resources are provided to those with knowledge of both the problems and the available resources or to those areas perceived as the ‘squeaky wheel,’ greater disparity may be produced. Consequently, this labeling process that identifies an area as environmentally unjust (and then responds to its needs) is based on perception (Holifield, 2003). The subjectivity of this process may lead to further inequitable support and response among all communities.

EIJ communities exist that are not identified as such; Krieg and Faber (2004) have found that EIJ exists at either end of the spectrum including disproportionately poor communities as well as those areas with diverse populations of average and better income. Because many communities are impacted disproportionately, and because some communities may face greater threats although “not typically identified as meeting EJ demographic criteria” it behooves activists, legislators, and public health officials to avoid dichotomous categorization of communities into “Environmental Justice and Non-Environmental Justice” (Krieg and Faber, p. 688) groupings. There again, relying solely on community perceptions and limited technologies in defining EJ communities potentially widens the gap of existing inequities between communities.

Schluter, Phillmore, and Moffatt (2004) studied the Scottish town of Grangemouth to determine what precipitated this former petrochemical boomtown’s environmental activism. It was determined that Grangemouth’s response to a new waste incinerator was more about economic impact than environmental impact and yet, “Grangemouth’s self-image as a disadvantaged town was affirmed by reminding others that residents of more affluent areas a few miles away were unlikely to be confronted

with such facilities being introduced on their doorsteps” (Schluter, Phillmore, and Moffatt, p. 725). Again, simply by identifying themselves as an EJ community, or in this case, as having EJ concerns, residents of this area were quickly accepted as such a community. While this may not be cause for great concern, it does provide an environment whereupon scarce resources and funding may not be provided in a just manner to all communities in need.

Calls for Response

Research in EJ has led to a myriad of potential solutions for addressing EIJ. Health education, community activism, and policy development are three categories that the following research tends to provide as potential keys to resolving EIJ. In response to their study on households led by single mothers, Preston, Warren, and Stewart (2000) called for individual health education among their priority population. Much like education taking place among black churches (who frame the EIJ issue within the spiritual context of stewardship: Taking care of the environment and planet that has been granted by the Creator) (Pinn, 2000), this education can serve to address EIJ at the primary, secondary, and tertiary prevention levels. Priority populations (those who are disproportionately affected by EIJ or who live in communities that may be at risk but are unaware of EIJ) may be educated about how to respond to existing problems of EIJ as well as prevent future problems from occurring. This then leads toward community activism, where multiple stakeholders call for change. Here prevention may include all three levels. Most often it will be utilized as tertiary prevention, as it responds to existing environmental degradation (and potential threats to health). However, out of this response, if the third category of policy development is carried out, then primary

prevention ultimately occurs as zoning laws, facility policies, and corporate procedures are enacted in a way to prevent (or at least reduce) future problems.

Health Education

When working with single mothers in Head Start programs in the state of Mississippi, researchers suggested that environmental health education among individual households may be the most effective means of addressing EJ education (Preston, Warren, and Stewart, 2000). Single mothers in this study often had lower educational attainment than individuals in other households. Researchers felt that these families would best be served if they were educated one-on-one about resources in the area, as well as in ways to reduce negative impacts to health due to environmental injustice issues. Similarly, black churches have begun addressing EIJ by tying the issue into lessons in stewardship (Pinn, 2000). With this method, entire congregations are being educated on environmental health.

Community Activism

Other research calls for community activity rather than one-on-one action. Schlosberg (2004) determines that community participation is a vital component of justice and that EJ is interlaced with issues of social and ecological justice as well. Schlosberg concludes that this must be a true bottom-up approach, rather than government dictating responsibilities to the community. Pellow (2000) challenges experts to consider EIJ from a multi-stakeholder perspective. He further states that, “the classic perpetrator-victim scenario ... has relatively little power to prevent ... injustice” (Pellow, p. 592). Because change is inevitable, as is conflict among stakeholders, Pellow calls for true collaboration when addressing EIJ. London (2003) studied EIJ among farming

practices in South Africa and called for the integration of human rights within the public health response. London firmly believes that community members need to speak out for EJ, rather than professionals speaking out alone. She calls for trade unions, women's groups, community groups, and environmental lobbies to lead the way.

Policy Development

Maantay (2002) calls for policy development and planning that involve better zoning practices and procedures as well as reduced consumption and better decision making in regard to noxious facilities. This approach seeks to prevent environmental injustice when possible, rather than address it after the problem has been created.

Because environmental justice education seeks to produce action, it must go beyond simply providing information to the priority population and also provide the skills and self-efficacy necessary to create behavior change.

Cutter (2006) speaks to the need to address social policies that can change the future of natural events:

Disasters will happen. To lessen their impacts in the future, we need to reduce our social vulnerability and increase disaster resilience with improvements in the social conditions and living standards in our cities. We need to build (and rebuild) damaged housing and infrastructure in harmony with nature and design cities to be resilient to environmental threats even if it means smaller, more livable places, and fewer profits for land and urban developers and a smaller tax base for the city. Disasters are income neutral and color-blind. Their impacts, however, are not (§ 13).

Policy development must address the needs of the population left most vulnerable following disaster. Such actions address the very issue of environmental justice and serve to prevent future catastrophes following natural events.

Disaster Response vs. Recovery

Comerio (1998) recognizes the disconnect by observers and the media between the terms response and recovery. Comerio maintains that victims of a disaster focus on rebuilding their community (the recovery stage of disaster management) long after the media and outside observers lose interest in the story.

Recovery takes time and the involvement of community members. Peacock, Morrow and Gladwin (2000) affirm that “disasters are inherently social events” (foreword). Rebuilding communities with limited resources requires a community to “attempt to re-establish social networks” (Peacock & Ragsdale, 2000, p. 25). Furthermore, the newly created environment needs to meet “acceptable parameters” (Peacock & Ragsdale, p. 25) in its recovery efforts and address sustainability, improving upon the natural and social environment when possible.

Housing Post Disaster: Recovery for Those Living in Poverty

Responding to populations post-disaster inherently requires focusing on housing needs, especially among the most vulnerable populations. Perhaps Ronald S. Parker said it best when he stated, “There is no cookbook for designing post-disaster interventions. Each country, culture, and disaster present opportunities and constraints” (2000, p. 84). Professionals within the field of disaster recovery are often reminded of the need to be culturally sensitive and to address recovery plans with input from the affected population, particularly those who are considered most vulnerable to disaster.

For populations with few resources, the threat of disaster is greater than in others (Fothergill, Darlington, and Maestas, 1999). According to Parker (2000, p. 80), “disasters strike the poor especially hard, and it takes them longer than the rest of society to recover.” Quarantelli (1995) shares that housing is not addressed linearly. Indeed, he states that some members of the community may be moving into permanent housing while others are still in emergency shelter. This creates situations in which disaster victims are being helped by government, nonprofit, and faith based agencies who, although working simultaneously, are often addressing various needs of the population at different stages of housing recovery (Quarantelli). Those who are disenfranchised prior to the disaster have a greater likelihood of recovering more slowly (or not at all) post-disaster. Furthermore, if sustainability and environmental justice are not addressed, these populations are most likely to suffer again in the future: Each occurrence creating greater difficulty in vulnerable communities successfully overcoming disaster and rising up out of poverty (Parker, 2000).

While vulnerability is often depicted as living in poverty status, Fothergill, et al. (1999) acknowledge that “factors such as language, housing patterns, building construction, community isolation and cultural insensitivities” (p. 156) also create vulnerability among families and individuals, placing many populations at greater risk of susceptibility to disaster. Indeed, issues presented through language barriers, isolation, environmental injustices, and cultural inappropriateness can create situations in which populations are unable or unwilling to respond to disaster messages. When messages are culturally inappropriate (i.e. do not take into account the deaf and hard-of hearing community, those who lack transportation, or the elderly and those with special needs),

even willing members of the community may be unable to respond in a manner that meets the suggested action promoted by the government or municipality.

In order to address such issues, and ensure culturally appropriate messages for all populations, it is important to include vulnerable populations in disaster planning. However, Phillips, Metz and Nieves (2005) state that it can be difficult to get vulnerable populations, specifically those with low income, to participate in disaster planning due to transportation issues. Professionals who truly want input and participation by populations that are historically overlooked must be culturally sensitive in their approach. This may require coordinating meetings with childcare, holding meetings at worksites and in neighborhoods, providing transportation, offering evening meals (once individuals are home from work), etc. Pre-planning must also take into account the special needs of people with disabilities as well as those needs that exist among the elderly population (Phillips, et al.).

In studying the effects of Hurricane Katrina on the population affected, Pastor, et al. (2006) stated that disasters do not affect all victims equally. For instance:

... Katrina swept away ... the traditional belief that natural disasters are a sort of equal opportunity affair—acts of God that affect us all. But as the government's emergency rescue and recovery efforts floundered, particularly in beleaguered New Orleans, the country began to realize that this was not the case. It was largely African American and often poor populace that had lived in the area most vulnerable to the collapse of the levees, that proved unable to secure transportation to evacuate the city, and that was now scrambling in frightening conditions to secure scarce aid

for their families, their friends, and themselves. Both the impacts of, and response to disaster, it seemed, were heavily affected by income and race (p. 1).

Water levels were also among the most high in historically African American neighborhoods and communities. This “natural” event, compounded with the social and economic gaps already present in predominately African American neighborhoods in New Orleans served to create further disparity in recovery.

To better address disaster recovery, communities must address housing concerns at all levels, pre- and post-disaster. This includes focusing on mitigation efforts to improve the safety and sustainability of housing (Wamsler, 2006; Parker, 2000). Wamsler (p. 151) states, “to avoid post-disaster destruction and the forced eviction of ... communities, proactive and preventive urban planning, including housing, is required.” Housing needs must be addressed before, after and during disasters. In fact, Wu and Lindell (2004) found that communities that had a housing plan prior to being struck by a disaster had speedier housing reconstruction in their areas post-disaster. These plans can, and should, be addressed in combination with EJ and sustainability among vulnerable areas. Such plans should take into account EJ among all residents, including those who do not own their own home. Bolin and Stanford (1999) note that renters in the United States often receive less government assistance during recovery than their homeowner counterparts.

Housing Post Disaster: Emergency and Temporary Shelters

Victims of disaster, particularly those with special needs and those who lack resources, often require shelter and housing. Evacuation often leads to the need for

emergency shelter (Barnes, 2006; Quarantelli, 1995), followed by temporary shelter, temporary housing, and finally, permanent housing (Quarantelli). These stages, as outlined by Quarantelli, apply to all populations affected by disaster; however, vulnerable populations are more likely to be negatively impacted to begin with and thus are likely to work through these stages at a slower pace (Bolin, 1994). Quarantelli (1995) differentiates between emergency and temporary shelter based on the length of stay, viewing emergency shelter as a safe living environment outside of one's permanent residence for a short period of time (including a few hours and no longer than overnight). Temporary shelter, on the other hand, is viewed by Quarantelli as an alternate living environment with an "expected short stay" (p. 45). This differentiation is not maintained by all authors in this area; for this reason, emergency and temporary shelters are discussed here together. In several of the following scenarios, authors refer to a shelter situation as 'emergency shelter' where Quarantelli would specifically define the same scenario as temporary (rather than emergency) shelter by design.

Quarantelli (1995) identifies the use of schools, churches, stadiums, etc. for use as emergency shelters. He states that because these buildings are only needed for a short time frame, staffing is typically not a concern, although access to emergency care may be. According to Barnes (2006), shelters should strive to be a 'home away from home.' Barnes advocates for shelters that work to meet the needs of a community, taking into consideration requirements for individuals with special needs, care for pets, communication necessities, recreation, and overall support of individuals and families. While "home-like supports exist" (p. 226) among some shelters, Barnes concludes that the supports are not consistent from one shelter or disaster to the next. In fact, following

Hurricane Andrew, tent cities in Homestead, Florida lacked a great deal of these supports. Key concerns among tent cities focused on lack of privacy, autonomy issues, poor sanitation and living standards, inconsistencies with the definition of ‘family’, and poor management of the facilities (Yelvington, 2000). Many individuals and families in Homestead tent cities were forced into shelter after being evicted from their condemned living spaces; others arrived when their existing shelters were damaged by the hurricane (Yelvington). What began as a feeling of community among tent city residents quickly turned into feelings of distrust for both management and fellow inhabitants. It should be noted that shelters are not housing and that permanent housing for all individuals affected by disaster is the ultimate goal of disaster recovery.

Housing Post Disaster: Issues for Women

Displacement may affect vulnerable populations differently and increase vulnerability among specific populations. For instance, female-headed households are considered especially vulnerable during times of disaster. According to Ozawa and Lee (2006), “Women who head households have the lowest income and net worth among all types of households” (p. 142). Enarson and Morrow (2000) acknowledge concerns for women disaster victims, stating that their “particular needs in the immediate aftermath of disaster are rarely addressed” (p. 139). Enarson and Morrow suggest addressing the needs of women in emergency shelters by focusing on issues such as childcare, safety, transportation, reproductive health care, and mental health. Yelvington (2000) elaborates, stating that mothers “felt frustration [in the Homestead tent cities] at what they saw as the degree of loss of control over their children” (p. 104). Because women are often the caretakers of their families, as well as responders to disaster in their communities, they

must be included in plans for all stages of disaster management (Enarson and Morrow, 2000), including emergency and temporary shelter needs. Again, without being culturally sensitive to the needs of the populations being served, emergency managers will be ineffective in providing quality care at any level.

Following Hurricane Katrina, domestic violence has been a central focus among emergency managers. Subsequent problems of an event of the magnitude of Hurricane Katrina includes residential displacement, economic and social disruptions, cramped living conditions (such as those found in FEMA trailers and other temporary housing solutions), as well as a breakdown in resources that existed prior to the storm (i.e. a loss of domestic violence shelters including the closure of the Young Women's Christian Association (YWCA) Battered Women's Program) (Jenkins and Phillips, 2008). Here again, vulnerable populations are disproportionately affected by the aftermath of storms such as Hurricane Katrina. Without deliberately focusing on such populations, many of these individuals will fall through the gaps.

Enarson (2006) points to the overwhelming number of low-income, African American women who were affected by Hurricane Katrina, and the large number of women who must navigate recovery and issues with housing while also serving as primary caregivers to children and elderly family members. Enarson notes, "The basic domestic chores of 'homemaking' gain new significance and are vastly more difficult in a FEMA trailer, a friend's apartment or the basement of a church – and parents will call upon daughters more than sons for help" (¶ 3).

Furthermore, Enarson (2006) explains that the majority of individuals with the greatest housing need post Katrina are women. This includes a disproportionate number

of women who are public housing residents. She also notes that “re-housing [women] is not a priority in our owner-focused and single-family home rebuilding plans” (§ 6). Such policies further exacerbate gender disparities after a storm of the magnitude of Katrina.

Housing Post Disaster: Psychological Issues in Shelters

Barnes (2006) calls for addressing psychological as well as physical needs in shelters. He advocates for the creation of social networks within shelters (through volunteer opportunities for those who are interested), the provision of recreation for individuals and families, and the coordination of services for pet care so that residents may have their psychological distress minimized. Counselors who can provide individual and group counseling sessions are also a focus of Barnes’ Home Away from Home model. The incorporation of these components in sheltering creates a welcome climate that can address many of the negative aspects found in the tent cities after Hurricane Andrew (Yelvington, 2000). By addressing psychological aspects of wellness and recovery, emergency managers can promote community resiliency (Barnes, 2006). Perhaps this focus on psychological wellness could also serve as a foundation to build trust with community members in order to address sustainability and environmental justice issues at a later point in time.

Housing Post Disaster: Planning for Recovery

Based on a review of the disaster recovery literature, lack of pre-planning among communities for emergency and temporary shelter adds to the hardships faced post-disaster. Furthermore, until shelters define and adhere to a set of core guidelines on what is provided in shelters, continuity between disasters (and shelters) will not exist. To truly incorporate pre-planning and shelter guidelines in such a way that all populations are

served well, those who are the most vulnerable (women, children, minorities, the elderly, those living in poverty and those with disabilities) must have their voices heard. The population served, especially those with the greatest needs, must be included in the planning of safe and effective emergency and temporary shelters.

Housing Post Disaster: Temporary and Permanent Housing

While shelters most often address the early needs of a community post-disaster, housing is needed long-term. Quarantelli (1995) distinguishes between temporary and permanent housing in that permanent housing is a permanent move to a residence (either a newly repaired or rebuilt original home or an entirely new residence altogether). However, in some extreme cases, Quarantelli argues that what was expected to only serve as a temporary residence becomes permanent.

Perhaps it is in the area of housing that disaster recovery specialists can make the best advancement toward community improvement and sustainability. It is also here that environmental justice issues can be addressed post-disaster. The location of new housing, types of materials utilized, and access to social systems available (such as parks and transportation) can have a meaningful impact on a community's future risk during a disaster. By advocating for sustainable communities that are environmentally just, vulnerable populations can reduce their risk of being disproportionately affected by disaster again.

Housing Post Disaster: Housing Recovery that Focuses on Sustainability

While Parker (2000) calls for a quick response to loss of housing post-disaster (internationally), he cautions those in the disaster recovery field to look for “durable solutions” based on the environment, available materials, culture, and “traditional

building techniques” (p. 81). Parker advises responders to keep culture in mind, while focusing on the greatest needs of housing improvements. He then advises professionals to address these issues only, thus improving the odds that the revisions will be followed.

Green building techniques, or sustainable building, “is a whole-building approach to design and construction incorporating methods that save or reduce resources in five categories: site, water, energy, materials, and indoor environmental quality” (CIWMB, 2007, ¶ 2). Sustainability promotes wise use of limited resources, and often reduces utility costs for families who will reside in the new homes. In addition to economic benefits, public health benefits are apparent as non-toxic materials are preferred in sustainable building (Green Building Resource Center, 2004, ¶ 4). Global Green USA is currently aiding New Orleans residents in addressing sustainability in the rebuilding of housing and schools post Katrina (Global Green, 2009).

Housing Post Disaster: Homelessness Post-Disaster

In contrast to Parker’s views on sustainability, FEMA promotes the use of trailers and mobile homes for temporary housing; yet, according to tent city residents in Homestead, most of these are provided to homeowners (Yelvington, 2000). After Hurricane Andrew, FEMA sought to close down tent cities prior to all residents being placed in temporary or permanent housing. Yelvington shares that while some residents had been placed in housing that suited their needs, many were left homeless. Yelvington states:

In this study of the nature of the United States disaster relief policy and practice, we can see how specific FEMA policies are not designed to

improve the status of the needy, but to return to some preconceived prior state of normalcy that was actually nonexistent (p. 114).

Quarantelli (1995) notes that while most all who need housing post-disaster are provided with housing “eventually” (p. 46) those who were homeless prior to the disaster are often ignored. The focus by the American government on disaster recovery has historically been one that addresses a return to the previous standard of living rather than seizing an opportunity to create community sustainability and usher in EJ. Individual assistance as provided by FEMA's Individuals and Households Program (IHP) “help[s] homeowners and renters affected by the disaster with housing needs and necessary expenses” (FEMA Disaster Assistance, 2009, ¶ 1). Because natural disasters tend to reoccur, it is imperative that the most vulnerable are supported and have their housing needs improved following a natural disaster (Parker, 2000). This helps to ensure that communities are in better positions to withstand the next disaster and to rebuild economically each time.

Housing Post Disaster: The Housing Gap Widens for the Vulnerable

Loukaitou-Sideris and Kamel (2004) found that while agencies promoted the use of program funds for housing equally among groups, “recovery mechanisms initiated by the [American] federal government left areas with high percentages of marginalized populations with relatively less assistance than other areas” (p. 22). Environmental injustice due to poor housing is a global issue of poverty. Pantelic, Srdanovic, and Greene (2005) point to the fact that throughout the world the poor disproportionately settle in hazardous areas, unable to purchase safe, permanent housing. Without addressing needs

of sustainability and environmental justice, the gaps between the wealthy and the poor will continue to broaden following each disaster.

For homeowners who lacked insurance, or for those who were underinsured, long-term recovery after Hurricane Andrew proved to be long and difficult. Although FEMA mobile homes were designed to be temporary, when permanent housing was unavailable, deadlines continued to be pushed back and many residents remained in trailers for years (Morrow, 2000). Because the American government tends to see housing issues as a part of recovery that is addressed by private industry, these gaps continue to grow (Peacock, and Girard, 2000). Peacock and Girard state that reliance on the private housing industry to address post-disaster housing needs is faulty reasoning by the United States government. Even pre-disaster, low-income housing is not always available to meet the needs of the population. The belief that all victims of disaster are affected equally does not take into account that populations are not on an even playing field prior to disaster. Thus, those with limited resources including lack of insurance (or being underinsured), and those with few social networks, poor credit, and lack of savings are placed at greater risk than community members with access to such resources (Peacock and Girard). Again, a governmental system that focuses on recovery among homeowners rather than renters or those who reside in public housing (Enarson, 2006), creates additional gaps for those in poverty and the working poor. The Northridge Earthquake that took place in southern California in 1994 provides a vivid example of this issue. Even with a concerted effort to address the needs of renters and multi-family housing following the disaster, renters more than homeowners suffered greater losses and received less aid (Phillips, 2009). Furthermore, Quarantelli (1995) shares that the types of

permanent housing developed post disaster are determined largely by the types of housing that existed in the area prior to the event.

Addressing Low Income Housing Needs

Comerio (1998) points out that middle-class home owners are taken care of through a "...combination of insurance settlements and ... SBA home loans..." while the outcome for renters and those who own low-income housing "is less clear" (p. 94). Those living in lower socioeconomic status are more adversely affected post disaster. This population often has fewer resources to begin with, and in the case when their support system is also affected, their options dwindle even more (Peacock, Morrow & Gladwin, 2000).

Promoting Shared Responsibility when Financing Recovery

Comerio (1998) offers three recommendations for creating shared responsibility in housing recovery. This includes "tax incentives for hazard mitigation ... [and] discounts to policyholders who have undertaken significant mitigation" (p. 252); private funding for private structures and government funding for public projects; as well as partnership between the government and insurers to gather data and improve models for "hazards estimation, underwriting, and insurance products" (p. 256). Comerio holds that true housing recovery must involve a partnership between public and private entities, utilizing the strengths of each.

Seeking Input from the Affected Community

Through all stages of recovery, community members should be involved in decision-making (Peacock, Morrow & Gladwin, 2000). This includes temporary housing issues and planning. Without addressing this as a priority, key groups are likely to fall

through the cracks and the recovery process is apt to be problematic and even discriminatory against women, low-income individuals, and some minority groups.

Improving Shelter Arrangements

After Hurricane Andrew, tent cities in Florida were the immediate response to many of the pressing needs of those left homeless after the disaster; however, issues surrounding the temporary housing arrangements quickly became problematic. Ethnic strife, bureaucracy, politics, a lack of cultural sensitivity, and the use of a system that did not respond to improve the needs of the most downtrodden citizens created major tension and shortsightedness in response to providing temporary housing (Yelvington, 2000).

While this is problematic, the work begins prior to the need for temporary housing. Yelvington explains, “... specific FEMA policies are not designed to improve the status of the needy, but to return to some preconceived prior state of normalcy that was actually nonexistent” (p. 114). Providing better temporary housing requires that changes in policy and procedure are made well before there is a need for them.

Future Problems in Sheltering and Housing

Quarantelli (1995) acknowledges several issues that will shape the future of sheltering and housing needs. The first concerns “changes in household composition” (p. 47) which must be addressed with future planning for sheltering and housing post-disaster. Indeed, Yelvington (2000) found this to be an issue in tent cities after Hurricane Andrew. The term ‘family’ by the official definition often did not match the family that was seeking shelter or housing (such as couples without children, single parents, etc.). Secondly, Quarantelli (1995) advocates for addressing the needs of the elderly, as the aging population is growing. Phillips, et al. (2005) call for specifically addressing the

needs of this population. Next, Quarantelli (1995) focuses on the shift that has taken place in the expectations society has regarding disaster relief. According to Quarantelli (p. 47), “much of the disaster assistance which was once accepted gratefully if offered is now seen as a mandated right.” Finally, Quarantelli suggests that immigration and broader cultures in America will lead to different languages and lifestyles, creating issues with planning and managing both in shelters and housing.

All issues listed here provide another argument for working closely with priority populations in the planning stages of disaster recovery. By ensuring that messages and disaster responses are culturally appropriate, many of the aforementioned concerns can be addressed. However, for long-term change it is vital to address the underlying problems associated with poverty and other vulnerabilities among populations, not simply focus on preparedness messages (Phillips, et al., 2005). Comerio (1998) recommends working to change the existing systems, including how insurance companies fund and respond to disasters.

Suggestions for a More Equitable Process

Multiple researchers suggest changes to the current disaster management system in order to provide more equitable care to all community members. Loukaitou-Sideris and Kamel (2004) promote changes in governmental residential assistance policies that reflect a concerted effort to provide resources to those who are in greatest need. Authors point out that many low-income families are denied needed homes while those in higher income brackets receive funding for cosmetic repairs (Loukaitou-Sideris and Kamel). Such policies create an environment where rebuilding is uneven throughout a region affected by disaster and residents return to their homes at vastly different stages, often

dependent upon their access to resources prior to the disaster. Policy changes addressing these issues, combined with sustainability efforts and EJ in critical areas, could have a great affect on disaster mitigation among a broad, underserved population.

Peacock and Girard (2000) agree that vulnerable populations should be better addressed; they promote education programs to raise awareness about insurance policies among minority communities and corporate programs to encourage the location of insurance agencies within minority areas. Insurance providers should practice ethical behavior with low-income residents and renters. Comerio (1998) promotes mitigation research among the government and private insurers to better address prevention prior to a disaster among vulnerable populations. These efforts are compatible with the section of the EJ framework that seeks to provide equal benefits to all communities.

Also advocating for equal benefits among communities, Loukaitou-Sideris and Kamel (2004) call for equivalent treatment of multifamily buildings and residences; left to the private sector alone, these residences are less likely to receive funding to rebuild. Comerio (1998) builds on this, offering a recommendation to provide income tax incentives for those insurers who address mitigation. Steps toward mitigation work well for achieving long-term sustainability and EJ.

Loukaitou-Sideris and Kamel (2004) call for the assurance of “an adequate supply of affordable housing during normal times” (p. 24) as well as collaborative work between municipalities and housing corporations. This helps ensure that families have access to safe and affordable housing and reduces the risk of these populations in disaster. This also serves to improve the availability of low-income housing post-disaster. Furthermore, such access promotes sustainability and EJ.

Bolin and Stanford (1999) assess that vulnerability should be defined “in terms of people’s capacity to avoid, cope with, and recover from disasters [and that this] draws attention to their living conditions, social and economic resources, livelihood patterns, and social power” (p. 90). Individuals affected by disaster who are lower income, including renters, incur greater difficulty in recovering from disaster, including the ability to find assistance during this stage (Bolin and Stanford).

Kamel and Loukaitou-Sideris (2004) caution that when framing the inequity that exists among vulnerable populations following disaster, it is the “active marginalisation [sic]” (p. 536) of such populations during recovery efforts rather than a population’s ‘vulnerability’ that creates the inequity that follows. For instance, governmental assistance programs are biased toward homeowners in the middle and upper classes rather than “marginalised [sic] social groups, such as low-income, non-citizen immigrants, minorities, and linguistically isolated households” (p. 534). In the event of the Northridge earthquake in southern California in 1994, Kamel and Loukaitou-Sideris found that more federal funding was available to single-family homeowners than multi-family housing for recovery. Comerio (2000) notes that Small Business Administration (SBA) loans primarily focused on “single-family homeowners” while HUD funding “went largely to apartment owners and low-income homeowners” (pp. 71-71). Interestingly, earthquake damage was fairly well distributed throughout neighborhoods of varying social classes. However, the “distribution of federal assistance” (p. 556) was inequitable and thus led to inequitable recovery among separate communities. Kamel and Loukaitou-Sideris (2004) note that while FEMA voiced their intention to provide assistance to diverse populations in this recovery phase, “most programmes [sic] lacked

clear guidelines for identifying areas of greatest need and prioritising [sic] aid accordingly” (p. 557).

The Northridge earthquake recovery efforts provide an effective comparison to Hurricane Katrina in New Orleans as both include a natural disaster involving a diverse urban population. In each of these, experts point to the social and economic issues that actually create the disaster, rather than the impinging storm itself. When housing policies disproportionately benefit some populations while negatively impacting others, recovery is unbalanced, social and environmental needs are not met, and gaps between communities further widen.

A 2007 United States General Accounting Office (GAO) Report noted the following issues with housing recovery in the Louisiana and Mississippi areas affected by Katrina:

Both Louisiana and Mississippi directed the vast majority of their CDBG [Community Development Block Grant] housing allocations to homeowners—tailoring their programs to address the particular conditions within their state. A portion of these allocations also was directed to other housing programs such as rental housing and public housing, as well as to projects that will alleviate costs associated with housing, such as utility and insurance costs.

Louisiana and Mississippi homeowner assistance programs are similar in that each is designed to compensate homeowners whose homes were damaged or destroyed by the storms. Under each program, the amount of

compensation that homeowners receive depends on the value of their homes before the storms and the amount of damage that was not covered by insurance or other forms of assistance.

These programs, however, differ in their policies and eligibility requirements (p. 24).

Finally, Comerio (1998) sets criteria in defining a successful disaster recovery process as it refers to housing. Comerio's suggestions include: Losses must be made manageable, repairs and rebuilding should be completed in two years, financing should be provided at all economic levels, the cost of the damage should not be exceeded, and public and private funds should be used together (rather than have them duplicate one another). She also suggests that this requires multiple partnerships working together as well as effective disaster preparedness planning. Comerio (2000) asserts that "a new recovery policy incorporating realistic costs for urban disasters will require a comprehensive revision of the government's role, new insurance instruments, and the involvement of the lending community" (p. 71).

When addressing housing needs post-disaster, it is clear that planning must occur before, during, and after an event. By addressing long-term sustainability and EJ among vulnerable populations, emergency managers will effectively reduce risks posed by disasters to communities. Finally, by working with the populations being served, disaster managers can ensure that sheltering and housing needs are culturally appropriate, that they are meeting the needs of those they serve, and that long-term recovery planning is working to mitigate disaster for all populations.

New Orleans Public Housing

Under the Housing Act of 1937, the Department of Housing and Urban Development (HUD) was given authority to contract with housing authorities in order to “provide subsidies and grants for operating expenses and modernizing deteriorated housing. In return, housing authorities agree to provide residents with decent, safe, and sanitary housing” (GAO, 1996, p. 3). HUD directly contracts with housing authorities while mayors are able to appoint a board of commissioners for oversight of developments. The role of HUD includes contractual supervision of housing authorities throughout the country and is “governed by statute and regulation” (p. 1).

The housing authority in New Orleans has had a tumultuous history. In the GAO report to the Honorable Richard H. Baker, House of Representatives in May 1996, it was noted that the Housing Authority of New Orleans (HANO) was “one of the nation’s largest ... and poorest performing housing authorities ... [ranking] the lowest among large housing authorities in the Department of Housing and Urban Development’s (HUD) performance measurement system” (p. 1). At the time of the report, HANO operated over 13,000 housing units with 24,000 residents. In its authority, HUD declared HANO “in breach of its contract, claimed possession of HANO’s assets, and dissolved HANO’s board of commissioners” (p. 2). In this single act, HUD took over the housing authority for the city of New Orleans and entered into an agreement with the Mayor of New Orleans.

Two problems among the housing units under HANO were singled out in the GAO report: Lack of routine maintenance (including repairs to buildings, keeping current with inspections and providing grounds keeping), and minimal protection and

modernization of assets (including the failure to replace worn out materials and systems as well as demolish buildings that were unsafe) (GAO, 1996). Leading up to this takeover, the GAO report notes that HUD had taken previous action which included among other things, withholding funding from HANO and requiring management by “a commercial property management firm” (p. 3). When improvements were not apparent (“a November 1995 survey showed that over 90 percent of a random sample of apartments did not meet quality standards for housing”), HUD stepped in for a takeover (p. 3).

According to a 2008 HUD news release, HANO “has been under HUD receivership since 2002” (§ 6). Turmoil with the city’s public housing authority did not end there, however. Following the aftermath of Hurricane Katrina, residents in housing units were forced to evacuate and the units themselves were boarded up, scheduled for demolition. This act met with great controversy throughout the city as advocates were concerned about the ‘right of return’ of public housing residents that fled during the forced evacuation.

According to a 2008 HUD news release, HANO is currently “working closely with developers and resident leaders to demolish and rebuild affordable rental housing and homeownership opportunities” (§ 6). The same news release touted the city’s progress in rebuilding public housing, noting the following:

- Community Center groundbreaking at Abundance Square in the Upper Ninth Ward to be built in the vicinity of the Abundance Square/Treasure Village mixed-income community

- The River Garden mixed-income community replaced St. Thomas, the previous public housing development; renters may use “their rental voucher to pay a portion of their mortgage” (§ 4) and qualify for homeownership
- Completion of the C.J. Peete public housing development demolition; this will be replaced with new homes in the fall of 2009
- Almost half of the Lafitte public housing development has been demolished and new construction will begin in the winter of 2009
- Demolition and new development is anticipated for the St. Bernard and B.W. Cooper housing developments adding to the “other five properties that have already been redeveloped” (§ 6).

Controversy continues to ensue regarding the ethics of the policies and practices in regard to New Orleans’ public housing and the residents who have yet to return to their homes.

In a special issue of the National Women’s Studies Association (NWSA) journal highlighting the events during and following Katrina, authors (Boisseau, Feltey, Flynn, Gelfand, and Tiece, 2008) of the Introduction note:

Arguments against rebuilding in the most damaged areas, which happen to be those in the lower Ninth Ward, would result in an 80% reduction in the black population of New Orleans, leading to the question, “Whose city will be rebuilt” (p. xv)?

Obviously, public housing issues in New Orleans have been turbulent in the past and continue to be clouded in controversy today.

The Delphi Approach: A History

The Delphi approach was originally developed in the 1950s by Dalkey and Helmer as a forecasting technique for making military judgments (Vázquez-Ramos, Leahy, & Hernández, 2007; Millar, Thortensen, Tomkins, Mephram, & Kaiser, 2007; De Villiers, De Villiers, & Kent, 2005; Hasson, Keeney, & McKenna, 2000; Spinelli, 1983). It has since been utilized to obtain group consensus as well as to determine policy positions (De Villiers, et al., 2005; Mullen, 2003) on topics outside “traditional scientific assessments” (Millar, et al., 2007, p. 55). Due to its flexibility, the Delphi technique has been employed in research focusing on social sciences, nursing, education, management procedures, police work, rehabilitation counseling, and public health, among others.

Debate exists around the use of the Delphi approach; many authors (even supporters) cite criticism of its lack of standard procedures on a variety of variables including sample size, reliability, validity, and consensus (Mullen, 2003; Loo, 2002; Greateorex & Dexter, 2000; Beech, 1999). However, others embrace the flexibility of the method and suggest that it may be adapted for any given number of research situations. Many advantages (including cost reduction, efficiency, and high validity due to the use of experts) have been cited for this approach (Beech, 1999).

The Delphi approach is used across disciplines and modified as needed to address novel research needs. According to researchers, crucial steps in using this method include having a sound questionnaire that has been pilot tested, carefully selecting the respondents, paying attention to the number of rounds and the time that panelists commit to the project, and ensuring “rigorous data analysis” (De Villiers, et al., 2005, p. 642). The fact that this approach crosses quantitative and qualitative boundaries makes it ideal

for many social science and public health issues including expert judgment regarding environmental injustice.

CHAPTER III

METHODOLOGY

Research Purpose

The fields of environmental science, public health, and disaster management converge in many areas, but perhaps none more important than in the matter of EJ. Better understanding the events following Hurricane Katrina in New Orleans, especially those that affect vulnerable populations (including residents of public housing), can aid in an expanded definition of EJ. Utilizing articles included in the Brookings Institution database as well as the Delphi method to ascertain expert opinion and forecasting of the public housing events in New Orleans, this research sought to determine the ethics of the events taking place and to predict the future of public housing in this area. Research results may be able to broaden the definition of EJ to include the circumstances in which governments provide public housing to residents. Expert opinion regarding the current and future status of public housing in New Orleans serve to shape the ongoing debate and controversy about public housing following Hurricane Katrina.

Subjects

The investigator performed quantitative and qualitative analyses of secondary sources, specifically a review of documents on public housing in New Orleans as provided by Brookings Institution. Great care must be exercised when using secondary data in order to avoid bias. Researchers (Webb, Campbell, Schwartz, Sechrest, & Grove 1981) point

out that “sampling error is possible when studying documents ...” (p. 80). One method for addressing this is to look for “items on which there is consensus, [as] there is a higher probability that the item reported is indeed valid” (Webb, et al., 1981, p. 81). As mentioned in chapter one, the Brookings Institution provides reliable sources of data that are balanced in nature.

The Brookings Institution is a nonprofit public policy organization based in Washington, DC. [Its] mission is to conduct high-quality, independent research and, based on that research, to provide innovative, practical recommendations that advance three broad goals:

- Strengthen American democracy;
- Foster the economic and social welfare, security and opportunity of all Americans and
- Secure a more open, safe, prosperous and cooperative international system.

Brookings is proud to be consistently ranked as the most influential, most quoted and most trusted think tank (Brookings Institution, 2009, ¶ 1).

Brookings Institution provides articles specific to Hurricane Katrina in its *Katrina Reading Room* (Brookings Institution Katrina, 2009). The *Reading Room* is sponsored by *Living Cities, Inc.* which provides “collaboration with three other think tanks focused on the storm's aftermath: the Center on Budget and Policy Priorities, Initiative for a Competitive Inner City, and the Urban Institute” (¶ 1).

Secondary data “are those data already collected by somebody else and available for ... immediate use” (McKenzie, Neiger & Thackeray, 2009, p. 82). Quantitative measures “rely on more standardized data collection and reduction techniques, using predetermined questions or observational indicators and established response items” (Green & Lewis, 1986, p. 151). Quantitative measures “use deductive reasoning” and “produce numerical data such as counts” while qualitative measures “use inductive reasoning” and “produce narrative data such as explanations” (McKenzie, Neiger & Thackeray, 2009, p. 112).

This analysis included reviews of articles on public housing and living standards in New Orleans post Katrina. The investigator utilized quantitative methods to assess the number of articles appearing in these databases that address public housing in New Orleans following Hurricane Katrina. This method of assessment provided an indicator as to the relative perceived importance of this issue in the New Orleans area. Secondly, articles were qualitatively assessed in order to determine the “climate” surrounding the public housing decisions in the New Orleans area post Katrina. Articles addressing public housing in New Orleans following the storm were read and then systematically categorized according to theme. Such categorization also addressed the need to look for consensus of ideas (as mentioned above) and added to the credibility of this research.

Additionally, the investigator used the Delphi technique to gather the opinions and predictions of key experts regarding the public housing matter in New Orleans post Katrina. To qualify for the study, key informants were required to be professionals or advocates in the fields of environmental law, public housing, community development, disaster recovery, sociology or the like. This purposive/judgmental sampling technique

began with two experts in New Orleans (who were also faculty) representing the fields of sociology and disaster management. The investigator met with these experts who then provided meetings and access to other professionals and advocates who met the criteria listed above. Following the purposive/judgmental sampling technique, the investigator followed up with all advocates and professionals to identify additional key experts to recruit for participation in the study.

GAO has used similar techniques in conducting research following Hurricane Katrina. While not reporting use of the Delphi technique, GAO has located area officials to answer questions about the effects and events following the storm in order to address the subsequent impact of disaster recovery within the community (GAO, 2006; GAO, 2007).

Methodology for the Delphi Approach

The Delphi method involves several “rounds” of questions that are circulated through a panel of experts (or respondents) who maintain anonymity and provide their opinions regarding a complex issue (Mullen, 2003; Loo, 2002; Greator & Dexter, 2000; Beech, 1999). These experts have in-depth knowledge and/or experience within the field and may include professionals or lay people (Mullen, 2003).

While the classic Delphi method seeks group consensus through these rounds of questions, consensus is not a requirement for policy Delphi (where “dissensus” may be the goal) (Loo, 2002, p. 763). Mullen notes that while some authors attempt to place narrow parameters on a “true Delphi” the focus historically has been on facilitating group communication concerning a complex issue. Therefore, whether a Delphi approach is classic, policy based, or any other number of modified versions, most authors agree that

the process of group brainstorming and the follow-up of quantitative and qualitative feedback concerning a complex issue or problem hold true to the model (and original intent) of the Delphi technique.

It is important to note that anonymity in the Delphi approach may best be described as “quasi-anonymity” as panelists are known to the researcher and to each other, but their comments and scoring remain “strictly anonymous” (Hasson, Keeney, & McKenna, 2000, p. 1012). Also, the number of rounds utilized differs from one study to another. Rounds are repeated until consensus is obtained or the study approaches gridlock. Furthermore, researchers caution against a study prolonged to the point of panelist boredom or burnout (Loo, 2002). Therefore, it is crucial that future researchers have enough rounds to allow experts to come to consensus, but not so many that they are lost to attrition.

In the first round, a question or series of questions are sent to the panelists (Vázquez-Ramos, et al., 2007; Mullen, 2003; Greateorex & Dexter, 2000). These questions may be quantitative or qualitative, as most Delphi methods utilize both techniques throughout the study (De Villiers, et al., 2005; Loo, 2002). Many first round questionnaires involve open-ended questions that ask for expert opinion and brainstorming from the panel members.

Each new round provides information back to the panel regarding the group’s answers in the previous round. Panelists are then invited to answer questions through a ranking or Likert scale system and provide additional qualitative feedback about why they have answered in a particular way (Vázquez-Ramos, et al., 2007; Spinelli, 1983).

Sometimes the request for “rationale or clarification from experts [are only required] from experts who score items outside a particular range” (Beech, 1999, p. 284).

The Delphi method has been adapted not only to use in various fields, but in its methodology as well. While originally designed as a series of surveys that would be mailed, technology has allowed many studies that use the Delphi method to gather data through electronic communication such as email (Loo, 2002). This again denotes the flexibility that is seen among researchers in regard to this approach. Hasson, et al. (2000) state that “an extensive review of the Delphi literature identified that to date no universal guidelines exist” (p. 1009). According to Loo (2002), there are five basic characteristics to the Delphi approach. These include: (1) carefully selected participants with “a broad spectrum of opinion” to serve as an expert panel; (2) panelists that typically remain anonymous; (3) researcher constructed questionnaires and feedback for the panel throughout the rounds of the study; (4) repetitive “rounds” of questionnaires and feedback; and (5) a final report of the results and possible action plans (Loo, 2002, p. 763).

Researchers (Hasson et al., 2000) cite Turoff’s (1970) outline of four research objectives where use of the method is appropriate. These include the need for expert judgments on information; the need to find consensus among a group; the need to correlate judgments among varied disciplines; and the need to educate the panelists about topics that are multidisciplinary.

Loo (2002) notes “four key planning and executive activities for a Delphi” (p. 764). These include “problem definition; panel selection; determining the panel size; and conducting the Delphi rounds” (p. 764). While many researchers offer insight and

assistance into utilizing Delphi methods appropriately, Mullen (2003) warns that there exists “a danger that over-prescription and narrow definition of Delphi will inhibit many valuable applications of this versatile technique” (p. 37). Others (Vázquez-Ramos, et al., 2007) attest that “how the researcher designs and implements the Delphi method is not as important as the philosophic assumptions underlying its usage” (p. 112).

Authors note that “the [Delphi rounds] process terminates when an acceptable degree of consensus is reached” (De Villiers, et al., 2005, p. 639). Loo (2002) notes that in addition to reaching consensus, rounds should stop “... when results become too repetitive or when an impasse is reached” (p. 766).

There is considerable discussion regarding the sample size needed for expert panels. Some researchers point to ranges between 15 and 60 participants (Hasson, et al., 2000) while others suggest 15 – 30 “carefully selected” experts, depending on the diversity of the group panel (Loo, 2002, p. 765). Still others note that ranges may span only a few people to panels in the thousands (Mullen, 2003). Mullen cites Reid’s acknowledgement (1988) that large panels tend to have high attrition rates and that groups of 20 often retain their expert panelists.

Delphi: An Analytical Approach

According to Grotorex and Dexter (2000) most Delphi studies use Likert items (interval scale) to gather expert opinion. When this is done, descriptive statistics including the mean and standard deviation can be analyzed for each question in each round. The mean corresponds to the group opinion of the experts, while the standard deviation (or interquartile range) signifies the degree of disagreement among the panel

members. Other analyses for each question in the round can include the median and mode (Vázquez-Ramos, et al., 2007; Gatrex & Dexter, 2000).

Hasson, et al. (2000) suggest utilizing qualitative software for those Delphi methods that begin with qualitative data in the first round. They also warn against removal of “infrequently occurring items” as this can bias the data and recommend that items should be removed by the panel alone (p. 1012).

Authors (Gatrex & Dexter, 2000) suggest that there are difficulties in significance testing in the Delphi method. First, “the statistical null hypothesis [does not correspond] to the exact question the researcher is actually asking” (p. 1023). They and others also discuss whether selected panelists or “experts” are a representative sample (Gatrex & Dexter; Hasson, et al., 2000). Loo (2002) notes that

... small, nonrandom samples typically used in Delphi studies can be very useful if the researcher carefully determines the key criteria for selection given the nature and purposes of the study and determined the sample size based upon the expected variation in responses (p. 767).

Advantages and Disadvantages of Using the Delphi Approach

Advantages to using this technique include efficiency and cost effectiveness, especially when compared to other techniques involving group consensus (Beech, 1999; De Villiers, et al., 2005). Using a panel of experts provides an opportunity to have thorough feedback and the technique is “novel, interesting and motivating for participants” who can provide a great deal of expert opinion on given topics (Beech, 1999, p. 283). Experts may be surveyed quickly and inexpensively without concern of their geographical location (De Villiers, et al., 2005). Because panelists remain

anonymous to other panel members, views are not easily influenced. Furthermore, no one expert governs the group (Vázquez-Ramos, et al., 2007). De Villiers, et al. (2005) note several researchers focus on the Delphi method as a technique that is capable of “straddling both qualitative and quantitative methodologies” (p. 642).

Disadvantages include a time consuming process due to the questionnaire rounds (Vázquez-Ramos, et al., 2007; De Villiers, et al., 2005) and the issue of poor results due to attrition (Vázquez-Ramos, et al., 2007). Because there is no agreed upon sample size and the panelists may not be representative (Beech, 1999) this creates potential problems as well. It has also been criticized for forcing consensus (Hasson et al., 2000). Researchers (Hasson, et al.) go on to state that “It is important to note that the existence of a consensus does not mean that the correct answer, opinion or judgment has been found” (p. 1010).

The Delphi Approach: Examples in the Literature

Researchers (Millar, et al., 2007) modified the Delphi technique to create the Ethical Delphi. The goals of this method include:

- (i) provide transparency by clarifying the basis of decision-making processes; (ii) allow the inclusion of a multiplicity of (stakeholder) viewpoints; (iii) facilitate systematic inclusion of ethically relevant information; (iv) enable systematic inclusion of ethical arguments; (v) facilitate the explicit inclusion of values at stake (p. 55).

In the Ethical Delphi, the goal is to “map the ethical considerations [and value judgments] that experts believe are pertinent and significant” in regard to a specific issue (Millar, et al., 2007, p. 56). Because there is not a goal toward consensus for action, the

Ethical Delphi addresses previous criticisms regarding consensus (Millar, et al.).

According to researchers, “the expert opinions derived from this process can be analyzed and presented both to decision-makers and to the public in general” (Millar, et al., p. 61).

Through their research regarding mental health service models, Fiander and Burns (2000) were able to provide feedback on the effectiveness of using a Delphi process to better understand social science concerns. In an attempt to better articulate the services provided by mental health practitioners, researchers worked with case managers to describe the work of the mental health field. In the first round, participants anonymously listed categories that would describe the needs of their clients. This was followed by rating the categories on a five-point scale, and then re-rating the categories given their personal ratings and those of the other professionals. This process ended with a “semistructured discussion” (p. 657) where professionals agreed on a final ten categories to sum up their professional work in the community. According to Fiander and Burns, “The Delphi-based approach ... represents an effective, straightforward, and time-efficient way of obtaining a workable consensus about a complex issue at the interface of clinical theory and practice” (p. 658). Authors also reiterate that such an approach provides equal voice to all participants and “enable[s] early achievement of a group consensus ...” (p. 658).

Instrument Selection

The instruments used in the study included the following:

1. A table was created as a quantitative instrument for performing a historical review of articles from Brookings Institution. The instrument was used to quantify the

number of articles written on the topic of public housing in New Orleans post Katrina as well as categorize the issue presented in each.

2. A modified Delphi approach was developed to measure key informants' knowledge, opinions, concerns and predictions on the public housing issue in New Orleans post Hurricane Katrina as well as their perceptions regarding the ethics of current practices. Survey questions regarding the beliefs, values and opinions underlying the current plans, lawsuits, and advocacy efforts related to public housing in New Orleans were also included in this measurement.

Preliminary Procedures

Meetings were held with University of New Orleans' faculty and disaster recovery professionals in the greater New Orleans' area. Through these contacts, the researcher gained access to key informants in New Orleans in the areas of environmental law, public housing, community development, disaster recovery, and sociology. The investigator followed-up with this group as a purposive/judgmental sample.

The researcher contacted key informants and informed them of the risks and benefits to participating in the study. Each key informant received written details of the study as approved by the Oklahoma State University (OSU) Institutional Review Board (IRB). Informants provided consent in writing to the investigator, who stored all paperwork in a secure location. Informants were assured of confidentiality throughout the entire study. It should be noted again that anonymity in the Delphi approach may best be described as "quasi-anonymity" as panelists are known to the researcher and often to each other but their comments and scoring remain "strictly anonymous" (Hasson, et al., 2000, p. 1012).

Once informants completed a consent form, they were asked to provide qualitative responses in the first round of questioning, followed by feedback on a scale of 1-5 in subsequent rounds regarding issues related to public housing in New Orleans. The final round sought consensus on factors where dissensus was still present and provided an opportunity for experts to give qualitative feedback on their position. Experts provided this information via electronic communication.

An analysis of public documents, including the categorization of articles from Brookings Institution also took place. No consent was taken for this portion of the study as all documents were publicly accessible.

Operational Procedures

Working with the schedule of key informants and professionals, interviews with New Orleans' advocates and agency professionals took approximately six weeks. During this time, the researcher also performed the analyses of secondary sources regarding the public housing controversy in New Orleans post Katrina.

Statistical Analysis

The investigator used a table to complete analyses of articles addressing public housing issues in the New Orleans area post Katrina. The Brookings Institution database was used for this purpose. These articles were assessed quantitatively (i.e. the number of articles appearing in the database following Hurricane Katrina) and qualitatively (i.e. categorizing the topics addressed in each of the articles). The Delphi technique underwent quantitative analysis; each item was examined, observing the degree of consensus that key informants obtained. Again, the level of consensus was determined by standard deviation. According to Shavelson (1996), "The greater the variability of scores,

in the distribution, the larger the standard deviation of the distribution” (p. 108).

Furthermore, as the “most commonly used measure of variability” (p. 109), the standard deviation is stable and may be applied to inferential statistics. Qualitative data provided by key informants were also analyzed by categorizing the most critical issues currently faced in New Orleans’ public housing arena as well as informants’ perceptions on the ethics surrounding the public housing controversy.

CHAPTER IV

FINDINGS

Findings from this study are discussed in two parts. First, articles found within the Brookings Institution database will be reviewed in order to determine the perceived importance of public housing issues in New Orleans post Katrina. Articles will also be assessed for content with the intent to establish those topics of relative importance in the public housing controversy.

Secondly, the three collected rounds of questionnaires using the Delphi method will be analyzed to determine expert opinion on the ethics of public housing in New Orleans post Katrina. The rounds will provide insight into the perspectives, opinions, and beliefs held by key experts as well as their degree of consensus over many issues within the public housing controversy.

Brookings Institution Articles

The Brookings Institution provides an online *Katrina Reading Room* that combines the databases of four think tanks: Brookings, Center on Budget and Policy Priorities, Initiative for a Competitive Inner City, and Urban Institute. The link to the *Katrina Reading Room* may be found at <http://www.brookings.edu/metro/katrina-reading-room.aspx>. Many of the links to articles, news releases and other printed materials listed in the *Reading Room* open to additional links and more articles. For the purposes of this research, only those materials included in the *Katrina Reading Room*

listing were analyzed. These secondary sources provide insight into the perceived importance of the public housing controversies in New Orleans following Hurricane Katrina as well as the category of topics discussed.

Twenty-three links to printed materials (including peer reviewed articles, newspaper articles and news releases, hereafter referred to as “articles”) were listed under the title “Re-Building the Gulf” while eight links were found under “Emergency Housing Assistance.” Of the 23 links listed in the re-building section of the *Reading Room*, eight articles included information on public housing. Of these eight articles, three focused entirely on public housing and five significantly included public housing issues in their discussion. Among the eight article links in the emergency housing section of the listing, only one article addressed public housing issues long-term, while the remaining articles focused specifically on immediate or short term emergency housing.

Articles that addressed more than one topic regarding public housing issues and those categories are listed here. Of the nine articles listed in the *Katrina Reading Room* focusing on or including public housing issues after Hurricane Katrina, seven concentrated on affordability and funding issues; six on the role of HUD in better addressing public housing as New Orleans rebuilds; seven of the articles mentioned mixed income housing as a solution or one part of a larger solution to the problem of providing adequate and safe public housing for New Orleans’ residents. Remaining topics included the lack of a clear plan for public housing or a current plan that was failing (mentioned in four articles); policy recommendations were mentioned in all nine articles; right-of-return to New Orleans was addressed in five articles; and sustainability was

included in three of those listed. See Table 1 for a complete listing of articles mentioned here and topics covered in each.

Table 1: Categorization of Brookings Institute Articles on Public Housing in New Orleans Post Katrina

Source	Public Housing	Affordability / Funding	HUD	Mixed Income Housing	No Clear / Failing Plan	Policy	Right of Return	Sustainability
Brookings Institution Special Analysis. (2005). New Orleans after the storm: Lessons from the past, a plan for the future.	Addressed			X		X		X
Center on Budget and Policy Priorities. (2006). Rebuilding aid for neediest Katrina victims should be retained in final supplemental funding bill. <i>News Release</i>	Addressed	X	X	X		X	X	
Fischer, W. and Sard, B. (2006). Housing needs of many low-income hurricane evacuees are not being adequately addressed. Center on Budget and Policy Priorities.	Addressed	X	X			X	X	
Fischer, W. and Sard, B. (2005). Bringing Katrina's poorest victims home: Targeted federal assistance will be needed to give neediest evacuees option to return to their hometowns. Center on Budget and Policy Priorities.	Focus	X	X	X	X	X	X	

Table 1: Categorization of Brookings Institute Articles on Public Housing in New Orleans Post Katrina (continued)

Source	Public Housing	Affordability / Funding	HUD	Mixed Income Housing	No Clear / Failing Plan	Policy	Right of Return	Sustainability
Liu, A. (2006). Building a better New Orleans: A review of and plan for progress one year after hurricane Katrina. The Brookings Institution.	Addressed	X	X	X	X	X	X	X
Popkin, S.J., Tuner, M. A., and Burt, M. (2006). Rebuilding affordable housing in New Orleans: The Challenge of Creating Inclusive Communities.	Focus	X	X	X		X	X	X
Turner, M.A. (2006). Building opportunity and equity into the <i>new</i> New Orleans: A framework for policy and action.	Addressed	X		X		X		
Turner, M.A. (2006). HUD disappoints in housing crisis. <i>The Times Picayune</i> .	Focus		X	X	X	X		
Zedlewski, S.R, (2006). Building a better safety net for the <i>new</i> New Orleans.	Addressed	X			X	X		

Delphi Method: Selection of Participants

Contacts with New Orleans professionals and advocates in the areas of disaster recovery and sociology provided names of advocates in the areas of public housing, environmental law, sociology, disaster recovery, etc., for the recruitment of participants for this study. On April 3, 2009, an email was sent to a list of advocates and professionals in the desired fields; follow up phone calls and emails were also made. Of those

advocates and professionals originally contacted to participate, one individual was no longer living and two agreed to take part in the study. An additional individual agreed to participate, but failed to complete an informed consent form; another declined stating no connections to the field of public housing, but provided the name of a colleague who then agreed to participate. A final professional did not respond to any of the requests. The names of four additional individuals fitting the key expert description were provided to the researcher. All four were contacted and of these, one agreed to participate, one agreed and then later declined citing time constraints, one offered resources but provided no response to the request to participate, and one failed to respond to the request.

Four key experts agreed to participate in the study and provided signed informed consent. Each of these four participants also gave written permission for their name to be shared as a key expert in this study. Later, one expert verbally retracted permission to publish their name.

Delphi Study: Round One

The Oklahoma State University (OSU) Institutional Review Board (IRB) approved this study, including the questions for round one. Round one questions were emailed to the four key experts. This round consisted of 11 open-ended questions covering ethical considerations; decision making ability; lawsuits; future predictions; environmental and public health concerns; and policy issues as they pertain to public housing in New Orleans following Hurricane Katrina. See Appendices A – H for paperwork demonstrating IRB protocol and approval (including modification applications and approval for rounds two and three), Appendix I for the approved recruitment script and Appendix J for the approved informed consent. The questionnaire for round one is

available in Appendix K and rounds two and three Likert scale items are found in Appendices L and M, respectively.

In round one, key experts provided qualitative feedback on each of the 11 open-ended questions. While several issues were mentioned by more than one person, diversity in responses led to the creation of 79 Likert scale items for round two. See Table 2 for qualitative data received from round one.

Table 2: Round One Qualitative Data

Question	Response
1. What ethical considerations, if any, are important when determining the future of public housing in New Orleans?	<ul style="list-style-type: none"> • The closing of four large public housing units was an act that denied right of return to thousands of New Orleans' residents • The City Council vote to demolish the four large public housing units, many of which were repairable illustrates a policy towards exclusion • The housing units should be replaced one by one • The right of return of its original residents • The dilemma of a social safety net funded by taxpayers (i.e. providing housing for those that are unable to pay for housing themselves due to poverty, disability and other socio-economic driving factors) • Housing prices have doubled, increasing hardships of those making minimum wage • Public housing must be provided if right of return exists • Mixed income vs. 100% affordable housing • Resident involvement in planning • Setting new admission for redeveloped sites such as work preferences
2. What current practices, if any, in the area of public housing in New Orleans are working well?	<ul style="list-style-type: none"> • Section 8 is still operating and still seems to have a wait list • Virtually none • New Section 8 vouchers are essentially unavailable in New Orleans • None of the federally run programs (i.e. public housing, rental assistance, FEMA trailers, etc.) • Emergency rental assistance programs run by local nonprofits • Resident Management Corporations (RMCs)
3. What current practices, if any, in the area of public housing in New Orleans are of concern to you?	<ul style="list-style-type: none"> • The rebuilding of the new units • Maintaining the units that are now in place • The demolition of St. Bernard, C.J. Peete, Lafitte and most of B.W. Cooper • HANO run public housing that is "so reduced it seems it will never become available to those who were not on housing before for many many years" • New Section 8 vouchers are essentially unavailable in New Orleans • None of the federally run programs (i.e. public housing, rental assistance, FEMA trailers, etc.) • No new disability-accessible housing for non-elderly residents in the near future • Mismanagement of funds • Failure to maintain units • Too much priority on the "Big 4" sites at expense of others • Lack of resident involvement

Table 2: Round One Qualitative Data (continued)

<p>4. Who are the key decision makers regarding the future policies and practices of public housing in New Orleans?</p>	<ul style="list-style-type: none"> • The city • HANO • The City Council • Mayor Nagin • Developers • HUD • Citizens of New Orleans who vote • Residential Leaders • Receivership Team • Congressional Leaders • Legal Services • LHFA
<p>5. What key decision makers, if any, are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans?</p>	<ul style="list-style-type: none"> • Resident council representatives • Residents in evacuee cities • Local community organizations • Former public housing residents and their advocates • Citizens who do not vote • A council and other officials who represent the populous and not business and multi-dynasty interests in New Orleans • Clergy • Community nonprofit stakeholders • Fair housing advocates • Universities
<p>6. Have lawsuits influenced the current and future policies and practices of public housing in New Orleans? If so, how?</p>	<ul style="list-style-type: none"> • To some degree, they may have slowed things down a little – but not much • Uncertain • Rental assistance and Section 8 lawsuits have changed those practices temporarily, but not long term • Fair housing suit against HANO and developer of River Garden forced monitoring of admissions • Advocacy and potential litigation influences policy by legal services
<p>7. In the future, will public housing in New Orleans be vastly different than it was prior to Hurricane Katrina? Why or why not?</p>	<ul style="list-style-type: none"> • Absolutely. There may be scatter site ... and a few new apartments, but the large public housing units are gone • The commitment of the city to the poor is obviously gone, and so more homelessness will appear • Yes. The demolition of all but Iberville Development makes the landscape very different • Yes, there will be much less of it, and the mapping will not allow for the same type of communities to form, for better or worse • Will be very different, hopefully for the better. • Units are down from 7,200 to about 3,000 or so after redevelopment • Better housing stock; better management by private managers

Table 2: Round One Qualitative Data (continued)

<p>8. What environmental issues, if any, are of concern to you regarding public housing in New Orleans (now and in the future)?</p>	<ul style="list-style-type: none"> • Before the storm, units were not kept up and were allowed to deteriorate. This created a set of substandard housing that threatened the safety of the residents needlessly (i.e. lead, vermin, substandard heating and cooling) • Currently, millions are being spent to fix up the remaining units, but whether there will be mitigation in the plan remains to be seen • The failure of restoration of the housing • A proper EIS was not done on the demolition of the Big 4 public housing developments; the debris and materials from the demolitions were dumped in landfills rather than salvaged and reused • New building materials in the mixed-income developments not green • Energy required to rebuild means more green house gasses • No plan for new development to be environmentally friendly, energy-efficient, using solar power or otherwise cutting down on utility costs • Lead paint, rats and high levels of asthma (due to mold) in old sites
<p>9. What public health issues, if any, are of concern to you regarding public housing in New Orleans (now and in the future)?</p>	<ul style="list-style-type: none"> • Sub-standard housing units in the past • Lack of affordable housing • Displacement of public housing residents • Uncertain • Rats in old housing sites • High levels of domestic violence
<p>10. What do you believe to be the top concerns of public housing policy in New Orleans (now and in the future)?</p>	<ul style="list-style-type: none"> • From local policy makers, how to keep the need down – how to maintain smaller and smaller units • Resettlement of the original residents of public housing and making housing affordable for those who were seeking public housing before Katrina • The lack of enough units to support the population of current and past residents who need public housing • Getting units open quickly that are vacant • Economic crisis stymie redevelopment • Returning HANO to local control out of receivership • Finding residents • Affordable utilities • Adequate funding for operational costs
<p>11. Please list any other issues regarding public housing post-Katrina that may be missing from this list.</p>	<ul style="list-style-type: none"> • What is the right of people to housing – especially after a disaster • The federal and local response to homelessness and overcrowding after this major urban disaster • Failure of affording the return of the original residents has been one of the high crimes against those who were displaced following Hurricane Katrina • Holding resident council elections • Setting admission policies • Resident employment and self sufficiency opportunities • Private management of Iberville site

Delphi Study: Round Two

Expert answers to round one questions were lifted from the questionnaires and placed in five-point Likert scale statements for round two. Once an IRB modification was

approved for the second round of the study, experts were asked to provide their feedback and opinion to 79 statements regarding New Orleans' public housing.

SPSS 16.0 was used to calculate the mean and standard deviation of each of the Likert scale statements, where Strongly Agree=5; Agree=4; Neutral=3; Disagree=2; and Strongly Disagree=1. For those questions with low standard deviation, greater consensus was obtained between the four experts. When standard deviation was low and the mean was high, this signified that the majority of participants collectively agreed with the statement; when the standard deviation and mean were both low, this portrayed that the majority of experts disagreed with the statement and that there was high consensus in that decision. For this study, answers of "neutral" were deemed to be noncommittal in nature; therefore, if the majority of answers were neutral or the majority fell on one side of agreement or disagreement (other than neutral answers), the question was not identified as an area of dissensus. Consensus was identified as complete when the standard deviation score was equal to .00 and was deemed high when the standard deviation score was less than 1.00 (and not the result of "neutral" or noncommittal answers from key experts mixed in with all other answers falling to the same side of agreement).

In round two, a fairly high degree of consensus was obtained. Of the 79 Likert scale statements provided to the experts, 50 of the statements had a high level of consensus based on the standard deviation (or the dissensus was not noted as in the case of scores falling only to one side of agreement or disagreement with neutral or noncommittal scores mixed in). This resulted in consensus for 63.3 percent of the statements and dissensus for 36.7 percent. See Table 3 for mean and standard deviation scores from round two questions.

Table 3: Round Two Mean and Standard Deviation Scores

N	Valid	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0
	Mean	4.50	4.75	4.25	2.75	3.25	5.00	4.50
	Std. Deviation	.577	.500	.500	.500	1.50	.000	1.00
N	Valid	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0
	Mean	5.00	3.00	3.00	3.00	4.25	3.50	4.00
	Std. Deviation	.000	.817	.817	.817	.500	1.00	1.41
N	Valid	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0
	Mean	3.75	4.75	4.25	3.50	4.50	3.25	4.50
	Std. Deviation	1.26	.500	1.50	1.29	.577	.500	.577
N	Valid	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0
	Mean	3.25	3.25	2.75	3.25	3.50	4.00	3.75
	Std. Deviation	.957	.957	1.50	.957	1.29	.000	.500
N	Valid	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0
	Mean	4.00	4.75	4.75	4.50	4.50	4.50	4.50
	Std. Deviation	.000	.500	.500	.577	.577	.577	.577
N	Valid	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0
	Mean	3.75	3.25	3.50	3.50	3.50	3.50	2.00
	Std. Deviation	1.26	.957	.577	1.29	1.00	1.00	.817
N	Valid	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0
	Mean	2.25	4.75	4.75	3.50	4.50	4.00	4.00
	Std. Deviation	1.26	.500	.500	1.00	.577	.000	.817
N	Valid	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0
	Mean	4.00	4.00	4.00	3.25	3.50	4.75	3.75
	Std. Deviation	.817	.817	1.41	1.50	.577	.500	1.50

Table 3: Round Two Mean and Standard Deviation Scores (continued)

		Q65	Q66	Q67	Q68	Q69	Q70	Q71	Q72
N	Valid	4	4	4	4	4	4	4	4
	Missing	0	0	0	0	0	0	0	0
	Mean	3.50	2.50	4.00	3.75	2.75	3.25	2.75	4.00
	Std. Deviation	1.29	.577	.817	.500	.500	.957	.500	.817
		Q73	Q74	Q75	Q76	Q77	Q78	Q79	
N	Valid	4	4	4	4	4	4	4	
	Missing	0	0	0	0	0	0	0	
	Mean	4.25	4.75	4.50	3.75	3.00	3.50	2.25	
	Std. Deviation	.957	.500	.577	.957	1.83	1.00	1.50	

Delphi Study: Round Two Items of Consensus

Key experts reported complete consensus ($s=.00$) in round two on six Likert scale items. Of these six items, key experts unanimously reported that they “strongly agreed” ($X= 5.00$) with two of the statements. These items were:

- An important ethical issue for public housing in New Orleans is the involvement of public housing residents in planning.
- An important ethical issue in public housing in New Orleans is determining if there is right of return for public housing residents, and if so, providing public housing accordingly.

Key experts reported unanimous consensus that they “agreed” ($X=4.00$) on the following four statements:

- Congressional leaders are key decision makers regarding the future policies and practices of public housing in New Orleans.
- The Louisiana Housing Finance Agency (LHFA) is a key decision maker regarding the future policies and practices of public housing in New Orleans.

- Of concern environmentally is whether public housing will be restored in New Orleans.
- Of concern environmentally is whether public housing units that are being restored will be safe and maintained.

A high level of consensus ($s=.50$) was obtained by key experts on fifteen items. In twelve of those items, key experts consistently expressed agreement with the statement while they consistently disagreed or had neutral feelings with the other three. Those items that participants agreed with included:

- The City Council's vote to demolish four large public housing units was unethical in that many of the units were repairable. ($X=4.75$)
- The City Council's vote to demolish four large public housing units was unethical in that it set a policy that excluded individuals. ($X=4.25$)
- Federally run public housing, rental assistance, and FEMA Trailer programs are not working well in New Orleans. ($X=4.25$)
- Of current concern in the area of public housing in New Orleans is the lack of public housing resident involvement in planning and decision making. ($X=4.75$)
- The Housing Authority of New Orleans (HANO) is a key decision maker regarding the future policies and practices of public housing in New Orleans. ($X=4.25$)
- Legal services are key decision makers regarding the future policies and practices of public housing in New Orleans. ($X=3.75$)

- Resident council representatives are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans. (X=4.75)
- Residents in evacuee cities are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans. (X=4.75)
- As a result of public housing policies post Katrina, less public housing will be available. (X=4.75)
- A key public health issue of concern regarding public housing in New Orleans is the lack of affordable housing. (X=4.75)
- The top concern of public housing policy in New Orleans is that the economic crisis will stymie redevelopment. (X=3.75)
- Determining the right of return to housing, especially after disaster, is a chief issue that must be addressed following Hurricane Katrina. (X=4.75)

Items that key experts consistently marked “disagree” and “neutral” included:

- An ethical decision for public housing in New Orleans would be to replace the public housing units one at a time. (X=2.75)
- The top concern of public housing policy in New Orleans is returning HANO to local control out of receivership. (X=2.75)
- The top concern of public housing policy in New Orleans is finding adequate funding for operational costs. (X=2.75)

An additional fifteen items met with a fairly high degree of consensus (s=.577).

Eleven of these items found favor among key experts, half of the participants “strongly

agreeing” and the other half “agreeing” to the Likert scale statement. The mean score for these 11 items was 4.50 and included:

- Closing four large public housing units was unethical in that it denied the right of return to thousands of New Orleans’ residents.
- An important ethical decision in public housing in New Orleans is determining whether new sites will be planned using mixed incomes or 100% affordable housing.
- Of current concern in the area of public housing in New Orleans is the lack of plans for disability-accessible housing for non-elderly residents in the near future.
- The Department of Housing and Urban Development (HUD) is a key decision maker regarding the future policies and practices of public housing in New Orleans.
- Local community organizations (including nonprofit stakeholders) are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.
- Clergy are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.
- Fair housing advocates are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.
- Citizens who do not vote are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

- As a result of public housing policies post Katrina, homelessness rates continue to grow.
- Prior to the storm, deterioration of public housing units led to environmental problems including issues concerning lead, vermin, mold, substandard heating and cooling, etc.
- Determining the federal and local response to homelessness and overcrowding after Hurricane Katrina is a chief issue that must be addressed.

Three items met with fairly high consensus ($s=.577$) and gravitated toward the “agreement” side with neutral scores mixed in. These three items ($X=3.50$) were:

- The rental assistance and Section 8 lawsuits changed public housing practices only temporarily.
- A key public health issue of concern regarding public housing in New Orleans is substandard housing units that continue to exist as in the past.
- A key public health issue of concern regarding public housing in New Orleans is vermin.

One item met with fairly high consensus ($s=.577$) and a lower mean ($X=2.50$), signifying that experts were split between “neutral” and “disagree.” This item was:

- The top concern of public housing policy in New Orleans is how to maintain smaller units.

Delphi Study: Round Two Items of Dissensus

Twenty-nine items met with dissensus in round two. These items had high standard deviation scores ($s=.817$ and higher) that were not the result of “neutral” or noncommittal answers from key experts. Therefore, items that contained neutral scores

mixed in to existing scores that were on one side of agreement or another were not recognized in this study as dissensus. The 29 items in round two that met with dissensus as defined above included:

- An important ethical decision for public housing in New Orleans is the setting of new admission requirements for redeveloped sites such as work preferences.
- Section 8 housing is a policy that is still working well in New Orleans.
- Emergency rental assistance programs (run by local nonprofit organizations, not the federal government) are working well in New Orleans.
- Resident management corporations (RMCs) are working well in New Orleans.
- Of current concern in the area of public housing in New Orleans is the rebuilding of new public housing units.
- Of current concern in the area of public housing in New Orleans is maintaining existing public housing units.
- Of current concern in the area of public housing in New Orleans is the mismanagement of funds.
- Of current concern in the area of public housing in New Orleans is the demolition of the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper).
- Of current concern in the area of public housing in New Orleans is the focus on the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper) at the expense of other public housing units.

- The City of New Orleans is a key decision maker regarding the future policies and practices of public housing in New Orleans.
- The New Orleans City Council is a key decision maker regarding the future policies and practices of public housing in New Orleans.
- Citizens of New Orleans who vote are key decision makers regarding the future policies and practices of public housing in New Orleans.
- Mayor Nagin is a key decision maker regarding the future policies and practices of public housing in New Orleans.
- Developers are key decision makers regarding the future policies and practices of public housing in New Orleans.
- Public housing resident leaders are key decision makers regarding the future policies and practices of public housing in New Orleans.
- The receivership team is comprised of key decision makers regarding the future policies and practices of public housing in New Orleans.
- Officials who represent the populous (and not business) are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.
- The Fair Housing lawsuit against HANO and the developer of River Garden forced monitoring of admissions into public housing.
- Advocacy and potential litigation influences policy by legal services.
- As a result of public housing policies post Katrina, “scatter sites” may exist with new apartments but large public housing units will no longer be available.

- As a result of public housing policies post Katrina, the city's commitment to the poor is gone.
- As a result of public housing policies post Katrina, private managers will provide better management of public housing.
- A key public health issue of concern regarding public housing in New Orleans is the displacement of public housing residents.
- A key public health issue of concern regarding public housing in New Orleans is the rising level of domestic violence in public housing.
- The top concern of public housing policy in New Orleans is the resettlement of the original residents of public housing.
- The top concern of public housing policy in New Orleans is making housing affordable for those seeking public housing prior to hurricane Katrina.
- The top concern of public housing policy in New Orleans is maintaining affordable utilities.
- Setting admission policies is a chief issue that must be addressed following hurricane Katrina.
- Resident employment and self-sufficiency opportunities are chief issues that must be addressed following hurricane Katrina.

Delphi Study: Round Three

The questionnaire for round three included only those 29 Likert scale items that met with dissensus in round two. Experts were provided with the Likert scale item, the distribution of scores provided by all experts in round two, and an opportunity to change and comment on any item that they chose. Instructions for this round asked key experts to

especially consider commenting on items where their response was in dissensus from the rest of the participants. Once the modification was approved by OSU IRB for the round three questionnaire, these 29 items were sent to key experts for feedback. Experts were notified that this third round was the final round, that they could change their answers and that they could provide qualitative responses.

Three of the four experts returned their round three responses. Of these three, two provided comments on questions where dissensus existed while one only provided quantitative feedback. SPSS 16.0 was used to calculate the mean and standard deviation of each of the Likert scale statements, where Strongly Agree=5; Agree=4; Neutral=3; Disagree=2; and Strongly Disagree=1. See Table 4 for mean and standard deviation scores from round three.

Table 4: Round Three Mean and Standard Deviation Scores

N	Valid	Q5	Q10	Q11	Q12	Q15	Q16	Q71	Q19
	Missing	3	3	3	3	3	3	3	2
	Mean	0	0	0	0	0	0	0	1
	Std. Deviation	3.00	2.67	3.00	3.33	4.33	4.67	4.00	4.00
N	Valid	Q20	Q23	Q25	Q26	Q27	Q28	Q29	Q31
	Missing	2	2	2	3	3	3	3	3
	Mean	1	1	1	0	0	0	0	0
	Std. Deviation	3.50	4.00	4.00	3.67	3.67	4.67	4.33	3.33
N	Valid	Q41	Q42	Q44	Q45	Q46	Q49	Q59	Q60
	Missing	3	2	3	3	3	3	3	2
	Mean	0	1	0	0	0	0	0	1
	Std. Deviation	4.00	3.50	4.00	3.67	3.67	1.67	5.00	3.50
N	Valid	Q64	Q65	Q70	Q77	Q79			
	Missing	3	3	3	3	3			
	Mean	0	0	0	0	0			
	Std. Deviation	3.67	3.33	3.33	2.33	2.33			
N	Valid	Q64	Q65	Q70	Q77	Q79			
	Missing	3	3	3	3	3			
	Mean	0	0	0	0	0			
	Std. Deviation	3.67	3.33	3.33	2.33	2.33			

Delphi Study: Round Three Items of Consensus

With the input of three key experts in the final round, consensus was reached on an additional fourteen items. Of these fourteen Likert scale statements, complete consensus ($s=.00$) was reached on three of the items; and a fairly high level of consensus ($s=.577$) was reached on the remaining 11. It should be noted again that this final round only included data from three of the four key experts who began the study. Furthermore, of the 29 items posed in round three, six items were not answered by one of the three experts who responded. These six items were not included in the listing of Likert scale statements where consensus was considered to be reached, as only two of the four key experts provided feedback on them. Among the three items where complete consensus was reached in the final round, key experts unanimously “agreed” ($X=4.00$) with two of the items and “strongly agreed” ($X=5.00$) with the other:

- Of current concern in the area of public housing in New Orleans is the mismanagement of funds. ($X=4.00$)
- Officials who represent the populous (and not business) are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans. ($X=4.00$)
- A key public health issue of concern regarding public housing in New Orleans is the displacement of public housing residents. ($X=5.00$)

Of the remaining eleven items where a fairly high consensus ($s=.577$) was reached among experts, ten of these were items that experts tended to “agree” with or provided a “neutral” or noncommittal response:

- Resident management corporations (RMCs) are working well in New Orleans.
(X=3.33)
- Of current concern in the area of public housing in New Orleans is the rebuilding of new public housing units. (X=4.33)
- Of current concern in the area of public housing in New Orleans is maintaining existing public housing units. (X=4.67)
- Citizens of New Orleans who vote are key decision makers regarding the future policies and practices of public housing in New Orleans. (X=3.67)
- Mayor Nagin is a key decision maker regarding the future policies and practices of public housing in New Orleans. (X=3.67)
- Developers are key decision makers regarding the future policies and practices of public housing in New Orleans. (X=4.67)
- Public housing resident leaders are key decision makers regarding the future policies and practices of public housing in New Orleans. (X=4.33)
- The receivership team is comprised of key decision makers regarding the future policies and practices of public housing in New Orleans.(X=3.33)
- As a result of public housing policies post Katrina, “scatter sites” may exist with new apartments but large public housing units will no longer be available. (X=3.67)
- As a result of public housing policies post Katrina, the city’s commitment to the poor is gone. (X=3.67)

Key experts “disagreed” (X=1.67) with the final item that met with a fairly high consensus (s=.577):

- As a result of public housing policies post Katrina, private managers will provide better management of public housing.

Among the fourteen items where consensus was reached in round three, key experts provided qualitative feedback on 11 of them. Table 5 provides a listing of these 11 items and the qualitative responses provided by participants.

Table 5: Round Three Qualitative Responses (Consensus Reached)

Likert Scale Item	Qualitative Response
Resident management corporations (RMCs) are working well in New Orleans.	"Hard to say in this environment" (Expert 1)
Of current concern in the area of public housing in New Orleans is the rebuilding of new public housing units.	"Of course, it is the 'concern' of the community, although the varying views of this concern are diverse. I think public housing should be rebuilt." (Expert 1)
Of current concern in the area of public housing in New Orleans is maintaining existing public housing units.	"Again, this is not a neutral statement. I think they should be maintained; others think they should be torn down." (Expert 1)
Of current concern in the area of public housing in New Orleans is the mismanagement of funds.	"Not an unusual concern with the historical track record." (Expert 1)
Mayor Nagin is a key decision maker regarding the future policies and practices of public housing in New Orleans.	"I don't think this should be true." (Expert 2)
Public housing resident leaders are key decision makers regarding the future policies and practices of public housing in New Orleans.	"Again, they should be – but are they?" (Expert 1)
The receivership team is comprised of key decision makers regarding the future policies and practices of public housing in New Orleans.	"[Does this mean that] the team consists of folks who already were key decision makers or [that] the folks that are part of the team are key decision makers now because they are part of the team [?] This is my question about this question." (Expert 2)
Officials who represent the populous (and not business) are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.	"But the question is who are these officials?" (Expert 1)
As a result of public housing policies post Katrina, "scatter sites" may exist with new apartments but large public housing units will no longer be available.	"Iberville and a few others will exist, at least for now. But most (the majority of) large public housing units will not." (Expert 2)
As a result of public housing policies post Katrina, the city's commitment to the poor is gone.	"There is still a commitment among the nonprofit sector, maybe stronger than ever, so I'm not sure what is meant by 'the city's commitment.'" (Expert 2)
As a result of public housing policies post Katrina, private managers will provide better management of public housing.	"We just don't know." (Expert 1)

Delphi Study: Round Three Items of Dissensus

In the third and final round, dissensus remained among key experts on nine of the 29 items. Again, the final round only included data from three of the four key experts who began the study which may have influenced the level of consensus reached. Also, because six of the 29 items were only answered by two of the three experts who responded in round three, these items were not included in the final analysis as having reached consensus and will be discussed separately in this chapter.

Key experts in New Orleans did not reach consensus on the following nine items in this study:

- An important ethical decision for public housing in New Orleans is the setting of new admission requirements for redeveloped sites such as work preferences. (s=1.73)
- Section 8 housing is a policy that is still working well in New Orleans. (s=1.15)
- Emergency rental assistance programs (run by local nonprofit organizations, not the federal government) are working well in New Orleans. (s=1.00)
- Advocacy and potential litigation influences policy by legal services. (s=1.00)
- The top concern of public housing policy in New Orleans is the resettlement of the original residents of public housing. (s=1.53)
- The top concern of public housing policy in New Orleans is making housing affordable for those seeking public housing prior to hurricane Katrina. (s=1.53)

- The top concern of public housing policy in New Orleans is maintaining affordable utilities. (s=1.53)
- Setting admission policies is a chief issue that must be addressed following hurricane Katrina. (s=2.31)
- Resident employment and self-sufficiency opportunities are chief issues that must be addressed following hurricane Katrina. (s=2.31)

Of the nine items were dissensus remained, one key expert provided qualitative feedback to seven of them. See Table 6 for these data.

Table 6: Round Three Qualitative Responses (Dissensus)

Likert Scale Item	Qualitative Response
An important ethical decision for public housing in New Orleans is the setting of new admission requirements for redeveloped sites such as work preferences.	"This seems normative to me ... it is not about who gets in." (Expert 1)
Section 8 housing is a policy that is still working well in New Orleans.	"People still need housing." (Expert 1)
Emergency rental assistance programs (run by local nonprofit organizations, not the federal government) are working well in New Orleans.	"There are great unmet needs in New Orleans." (Expert 1)
Advocacy and potential litigation influences policy by legal services.	"Again, I'm not sure what this means." (Expert 1)
The top concern of public housing policy in New Orleans is the resettlement of the original residents of public housing.	"If you mean here the official policy, then I would have to say no." (Expert 1)
The top concern of public housing policy in New Orleans is making housing affordable for those seeking public housing prior to hurricane Katrina.	"Little evidence that this is occurring." (Expert 1)
Resident employment and self-sufficiency opportunities are chief issues that must be addressed following hurricane Katrina.	"Most of [the] public housing residents are elderly, disabled and children." (Expert 1)

Delphi Study: Round Three Items with Missing Values

Six of the 29 items put forth in round three had missing values. These items are addressed separately as only two of the four original key experts provided feedback on them in the third round. These are:

- Of current concern in the area of public housing in New Orleans is the demolition of the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper).
- Of current concern in the area of public housing in New Orleans is the focus on the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper) at the expense of other public housing units.
- The City of New Orleans is a key decision maker regarding the future policies and practices of public housing in New Orleans.
- The New Orleans City Council is a key decision maker regarding the future policies and practices of public housing in New Orleans.
- The Fair Housing lawsuit against HANO and the developer of River Garden forced monitoring of admissions into public housing.
- A key public health issue of concern regarding public housing in New Orleans is the rising level of domestic violence in public housing.

Each of these items met with dissensus in the second round among the four experts. While varying degrees of consensus were reached among a few of these items in round three, the data are skewed as they only represent half of the key experts involved in the study. However, three of these items included qualitative feedback from key experts in round three and those data are provided in Table 7.

Table 7: Round Three Qualitative Responses (Missing Data)

Likert Scale Item	Qualitative Response
Of current concern in the area of public housing in New Orleans is the demolition of the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper).	“This was a big concern about 1.5 years ago, but now that they are demolished already, the concern is less about the demolition and more about what we do going forward.” (Expert 2)
The Fair Housing lawsuit against HANO and the developer of River Garden forced monitoring of admissions into public housing.	“Just don’t know ... both sides claim victory.” (Expert 1)
A key public health issue of concern regarding public housing in New Orleans is the rising level of domestic violence in public housing.	“No way to measure this ...” (Expert 1) “I’m not aware of this, but that does not make this not true [sic].” (Expert 2)

Delphi Method Results

With the addition of 14 items where some level of consensus was reached in round three, key experts found agreement with one another on 81 percent of the Likert scale items that they rated. As mentioned in the review of Delphi method in Chapter Three, while the classic Delphi method seeks group consensus through rounds of questions, dissensus among key experts can also provide insight (Loo, 2002). Amid the controversy of the public housing issue in New Orleans following Hurricane Katrina, identifying areas of dissensus may prove to be keys in understanding the spectrum of views among those who are working toward social and environmental justice for public housing residents in the city.

Limitations

While a high level of consensus was reached among key experts in this study, it is only among four advocates or professionals in the New Orleans’ area; furthermore, only the opinions of three key experts were represented in the third and final round. Recruiting key experts for this study proved to be difficult. Some advocates and professionals expressed concern regarding the use of the term “key experts” and stated that while they

were advocates, they did not view themselves as experts on the topic. Others cited time constraints as a reason for not participating. A few of those contacted offered assistance through the sharing of resources and articles, or the names of additional professionals to contact for recruitment even when they themselves declined participation. While research has supported studying only a few experts as an appropriate sample size (Mullen), the Delphi technique has no agreed upon sample size which may mean that the panelists were not representative (Beech, 1999).

As recovery continues, much of New Orleans remains in a turbulent and chaotic state, particularly for those advocates and professionals who are working with populations living in poverty, or serving the elderly, people with disabilities, etc. Such stressors three and a half years following “the storm of all storms” may have impacted participation rates among professionals for this study. Furthermore, the loss of one key expert in the final round due to attrition created an additional limitation with data. It is not possible to say that consensus on 81 percent of the original 79 Likert scale items would have been reached had all key experts provided feedback in round three.

Another limitation of this study was the narrow focus on professionals and advocates in the field. While this was deemed necessary in order to not create further trauma to vulnerable populations who have lost housing, it should be noted that not including the very population being studied diminishes the type of data collected. While advocates are able to empathize with the populations that they serve, they have no immediate and personal experience of the daily living situations in New Orleans public housing before, during, and after the storm.

Furthermore, as mentioned in Chapter 3, “It is important to note that the existence of a consensus does not mean that the correct answer, opinion or judgment has been found” (Hasson et al., p. 1010). Portraying such would be a discredit to the fields of study represented here, especially in light of such a small sample size that may not be representative of the larger population of professionals and advocates working in New Orleans.

Another area of concern was the rating of Likert scale items through electronic communication alone. Once respondents provided qualitative feedback in the third round of the study, it became apparent that some dissensus was merely a matter of experts reading and interpreting questions differently. Having held a final round in person or by conference call could help to reduce such issues in the future while also providing better data overall.

Finally, this study addressed only one disaster recovery effort at one point in time. In light of the history of New Orleans’ public housing as well as the diversity of its population, drawing generalizations to other regions and housing developments following a disaster may prove difficult although lessons learned regarding environmental justice may be transferrable to a number of scenarios both nationally and internationally.

CHAPTER V

CONCLUSION

Introduction

The study of the New Orleans public housing controversy following Hurricane Katrina provides enlightenment into the larger social, environmental, and public health issues affecting this diverse city and its population. Kamel and Loukaitou-Sideris (2004) note that “studies show that recovery processes ... take place within their larger social and political contexts” (p. 535). Remaining mindful of this fact can aid in interpreting the broader issues affecting the people of New Orleans during the recovery phase, especially those individuals and families in search of public housing and evacuees still waiting the opportunity to return home. Addressing the ongoing controversy that surrounds the public housing arena in New Orleans is paramount.

Consensus among Advocates

New Orleans advocates and professionals included in this study unanimously support the involvement of public housing residents in the planning stages of public housing development. Experts consider this issue ethical in nature. They also believe that the right of return for public housing residents is an important ethical consideration in New Orleans and that public housing should be provided accordingly. Respondents express shared concern as to whether public housing will be restored in New Orleans and whether those units that are restored will be safe and maintained. Such responses are not

surprising considering the turbulent history of public housing in New Orleans. Advocates seek greater involvement and decision making ability by the population being served and also want to address environmental issues of safety, health, and maintenance as they relate to new and restored public housing units. While respondents strive for a system that provides power and a “voice” to public housing residents in regard to their own destiny, they unanimously agree that congressional leaders are key decision makers in this arena. They largely agree that HANO, HUD, legal services and the Louisiana Housing Finance Agency (LHFA) are as well.

This issue is not a new one; it is experienced in many fields. Advocates seek involvement of the populations they serve while political power most often rests with politicians and other community leaders. Gaining input from a population that is impoverished, working to survive each day, or who has not returned home from forced evacuation and lack of housing is difficult at best. Much of the controversy that revolves around the public housing situation in New Orleans can be addressed with input from former, current and future residents. However, when these residents are unavailable, still living in evacuee cities, placing their energies and efforts into surviving day-to-day or simply ignored by the political system, decisions are made *for* them instead of *with* them. When this happens, controversy ensues.

Professionals and advocates in New Orleans find high levels of consensus regarding the unethical nature of the closure of the four large public housing units (St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper) following the storm. Problems with these closures focus on right of return, setting a precedent of policy that excludes individuals, and the fact that many of the units were repairable. (Past concern with public housing

included environmental problems such as lead, vermin, mold, substandard heating and cooling, etc.). Consideration for new housing development arrangements has been a key issue in New Orleans following Hurricane Katrina. As seen in the review of public housing recovery articles from Brookings Institution as well as input from key experts in the Delphi study, mixed-income housing has been at the center of discussion regarding new development in New Orleans. Respondents agree that this issue is an important ethical decision. Mixed-income housing seeks to develop and promote housing communities that are diverse in nature. Mixed-income models promote housing developments that include those living in poverty as well as middle class residents (Schwartz & Tajbakhsh, 1997; Ceraso, 1995) and are a focus of the federal government's response to public housing issues (Schwartz & Tajbakhsh, 1997). According to Ceraso (1995),

some housing activists have argued that scarce resources should be extended first to those who need them most; but the devastating consequences of concentrating and isolating the poor have led others to adopt strategies in which working families play an integral role (§ 4).

The New Orleans' community has moved forward with mixed-income housing developments after demolishing four large public housing units. In fact, respondents agree that current public housing policies are changing the landscape of public housing units in New Orleans; however, they collectively disagree that the housing stock is better as a result of current policies. One expert notes that while the ethics surrounding the closures of large units was a major focus in the past year and a half, now that these developments have been demolished the only choice is to determine "what we do going

forward.” Mixed-income communities have developed out of the demolition of larger, more traditional housing units; this has occurred while advocates note the ethical concerns surrounding right of return and housing for those in need. Therefore, future decisions for advocates, professionals, policy makers, and hopefully, residents of public housing themselves, will be to determine how to provide safe, affordable housing to those in need. Experts note that a major concern revolving around public housing issues in New Orleans is the lack of public housing resident involvement in decision making. Future involvement of residents in such decision making will also need to include those individuals and families who evacuated during Hurricane Katrina and are still waiting to return home. In fact, one expert noted in the first round that, “The failure of affording the return of the original residents has been one of the high crimes against those who were displaced following Hurricane Katrina.”

Advocates note that environmental concerns exist among the new developments, including the mixed-income communities. Respondents agree that lack of “green” materials or energy-efficient methods in the creation of these developments generates concern. While mixed-income developments can provide steps toward environmental justice (as both benefits and burdens are largely shared among a diverse population and planned communities often include greenways and address other environmentally friendly methods), lack of environmental integrity in the construction of these communities can create problems in the future.

In addition to focusing on the quality of public housing, advocates also address quantity. Less public housing and growing homelessness rates as a result of public housing policies post Katrina are of concern among the experts in this study. Providing

affordable housing and getting vacant units opened quickly are also primary issues that advocates discuss. Respondents report concern over the current national economic crisis and its impact on redevelopment. With these issues in mind, it will be critical to address the amount of housing that is provided in New Orleans' future so that those who are poor, disabled and elderly are not made to be more vulnerable during the next disaster.

Experts agree that federally operated public housing, rental assistance and FEMA Trailer programs are not working well in New Orleans. They also agree that the lack of planning for disability-accessible housing for non-elderly residents is a key concern. Respondents feel that many groups are missing from discussions and planning regarding the future policies and practices of public housing in New Orleans. These groups include: resident council representatives, residents in evacuee cities, local community organizations (including nonprofit stakeholders), clergy, fair housing advocates, university partners and citizens who do not vote. Finding ways to incorporate those individuals and organizations that currently do not have a voice in the future of New Orleans' public housing development is essential. Without input from key partners such as these, important issues will go unaddressed and past mistakes will be repeated.

Dissensus among Advocates

Amid the controversy found in New Orleans' public housing recovery, varied opinions exist regarding the best course of action for the future. Many of these contrasting opinions are found equally among advocates and professionals that want to provide safe, affordable, quality housing to people in need. Acknowledging the dissensus that exists among advocates and professionals in the field may help to shed light on the problems and controversy that exist overall.

Given the chaotic and turbulent history of New Orleans' public housing (including the past mismanagement of funds and lack of care for residents), differing opinions among residents in New Orleans may heighten suspicion that malicious motives are present. When advocates (who by their very nature seek to improve the living conditions and quality of life among those they serve) disagree, this can aid in better understanding the diversity of thought that is present in finding solutions to a problem that is multidimensional. When no panacea exists for such problems, the many other solutions can become incredibly messy. Unintended negative consequences occur as a result of policy; and even while some issues are "fixed" due to the influence of new strategies and procedures, others become broken as a result. Gaining insight into the beliefs of advocates in the field as they grapple with such issues can aid the larger community in better understanding the problems, solutions, and potential unintended negative consequences of those solutions as they are discussed.

Advocates and professionals participating in this study are unable to agree with one another regarding the setting of admission requirements for redeveloped work sites such as work preferences. One expert reports, "This seems normative to me ... it is not about who gets in." Opinions differ dramatically on this issue, especially in light of the reduced number of public housing units currently available and the issue of right of return.

Other areas of dissensus include those programs that are "working well" in New Orleans following Hurricane Katrina. Advocates are in disagreement as to whether the following programs are working well: Section 8 housing, emergency rental assistance (run by local nonprofit organizations, not the federal government), and resident

management corporations (RMCs). One expert notes that “people still need housing” and that “there are great unmet needs in New Orleans.” (Respondents came to a degree of consensus regarding RMCs working well, but this was in the third round where one respondent did not provide data.) Such dissensus among advocates provides insight into why the broader population has varying degrees of opinions about the success of various programs working to rebuild New Orleans.

Other areas of dissensus focus on existing policies and their impact on the future of public housing. Advocates do not agree on whether advocacy and potential litigation influences policy by legal services. One expert mentions in round three that they are not certain “what this means” and thus item wording may be a primary reason for dissensus on this issue. Another area of dissensus is whether the top concern of public housing policy in New Orleans is the resettlement of the original residents of public housing. An expert stated, “if you mean here the official policy, then I would have to say no.” Again, this may have been an issue of item wording as respondents may have been addressing either the ideal situation or the actual one. This same issue is seen again on the next item: The top concern of public housing policy in New Orleans is making housing affordable for those seeking public housing prior to Hurricane Katrina. The qualitative response by an advocate is that there is “little evidence that this is occurring.” Advocates also disagree about the nature of resident employment and self-sufficiency opportunities in public housing. One respondent notes, “most of [the] public housing residents are elderly, disabled and children.” Here a disconnect may exist as to who will be served in public housing and how those services will be addressed. Again, when these are issues of dissensus among key experts, it is no wonder that such a controversy exists among the

broader public addressing housing issues in New Orleans in the aftermath of Hurricane Katrina.

Respondents also meet with dissensus regarding the rebuilding of new public housing as a current concern, the maintenance of existing units, and the mismanagement of public housing funds. Advocates fail to agree on the following as to whether they are key decision makers in the future of New Orleans' public housing: Citizens who vote, Mayor Nagin, developers, public housing resident leaders, the receivership team, and officials who represent the populous. Other items of dissensus include: Whether large public housing units will exist in the future of New Orleans, if the city has lost its commitment to the poor, whether private managers will provide better management of public housing, and whether the displacement of public housing residents is a key public health issue. Each of these issues are resolved in round three where key experts find some degree of consensus; however, only three of the original four respondents provided data in this round.

Areas of dissensus throughout the study appear to center on who the key decision makers are, what programs are and are not working well, and what policies are in the best interest of public housing residents and the future of public housing in New Orleans. Because advocates fail to agree on what the future of public housing in New Orleans will look like, this study was not predictive in nature. These issues are vast and their outcomes have incredible impact on the people and communities that live (and seek to return to live) in New Orleans.

Discussion and Implications

Environmental injustice has occurred among New Orleans public housing residents following Hurricane Katrina. Right of return has been limited due in part to the demolition of the “Big 4” housing units. While replacement of these units with mixed-income housing may have improved the quality of public housing communities (a matter still disputed among advocates and professionals participating in this study), it dramatically affected the quantity of public housing available in the area. This is an issue of great importance considering that current and former New Orleans’ residents still remain in need of public housing. Many former public housing residents have been unable to return to their home (and cultural roots) as housing is not available. Others who were on a public housing waiting list prior to Katrina still remain without housing due to these changes. One key expert noted in the first round of the Delphi study that “units are down from 7,200 to about 3,000 or so after redevelopment.” Such actions create hardships and vulnerability for minorities, people with disabilities, single parent households and the elderly. This creates environmental injustice as some segments of the New Orleans population are not receiving equal benefit (or burden) of environmental development (such as the creation of mixed-income housing units). Such development, when it serves to limit the quantity of housing available, discriminates against those most in need and creates injustice.

Large public housing units closed although many advocates state that they were repairable (an item of consensus among key experts in this study). Residents were forced to evacuate from these units and a vast majority have subsequently been prevented from returning home. Closure of the four large public housing units followed by the

development of mixed-income communities has created an environment that is not responding to the vast numbers of citizens in need of public housing. Some advocates have questioned as to whether such decisions were made in an effort to reduce New Orleans' large population of poverty or perhaps to gain valuable land in a city that thrives on tourism and is limited in growth due to the presence of the Mississippi River and the Gulf of Mexico.

Furthermore, by choosing to not rebuild in the lower ninth ward, New Orleans systematically reduces its black population by 80 percent (Boisseau, et al., 2008). This action changes the demographics and underlying culture of the city. It holds the possibility of dramatically affecting the political structure of New Orleans and again, demonstrates environmental injustice as the black population is adversely affected following the storm.

Phillips (2009) comments on the importance of "place" in a city such as New Orleans with its rich history of food, music, culture, people and events. When policies and development do not allow individuals and families to return to their homes following disaster this sense of "place" is negatively impacted and can have dire consequences for those who are unable to return. Public housing policies, including well intentioned mixed-income housing developments, can shape a community's culture and sense of place for better or for worse.

Recommendations

Public housing advocates in New Orleans are seeking best practices and solutions within a system that has a tumultuous past at best. Many have had to grapple with the loss of large housing units, an event that most feel is unethical as it denies the right of return

to former residents and removes developments that were easily repaired prior to being demolished. Because these events have already taken place and new developments (including mixed-income housing) are now present, it will behoove advocates in the field to study other mixed-income housing developments nationally (such as those found in New York City, Seattle and Chicago). Better understanding the benefits and downfalls of such communities will aid advocates in addressing policies and practices that can reduce unintended negative consequences of new housing.

All experts report that public housing residents should have their voices heard and equally report concern that this is not happening as future public housing policies and procedures are being created. All fields of study addressed in this document (environmental science, disaster management, and public health) focus on the importance of working with communities and bringing community members to the table. After all, community members are the true experts of their community; it behooves those with political power and clout to listen to them for their expertise. Holding meetings in neighborhoods where residents are present, providing food and transportation to those residents who want to engage in decision making activities, scheduling meetings at various times and locations that meet the needs of community members, and finding avenues to quickly survey and distribute the results of resident decisions is key. While this recommendation is standard for all fields, it is also a difficult one to accomplish. This difficulty is further compounded among former, current and future New Orleans public housing residents as many are still living in other locations, seeking employment, or working to survive day-to-day. Additionally, residents who are elderly and those with

disabilities have further barriers that must be addressed in order to include them in planning and decision making activities.

Mixed-income housing developments, regardless of the past controversy surrounding their creation and acceptance in New Orleans, are the “new face” of public housing throughout the nation. Beyond accessing models of these communities, advocates will be well served to address the incorporation of EJ as new developments are being built. All advocates have some degree of consensus regarding the need for “green” policies in public housing. A focus on environmentally friendly policies can reduce costs to residents long-term. More importantly, incorporating EJ measures includes focusing on greenways; addressing access to transportation; reducing public health concerns (those previously mentioned include lead, vermin, high asthma rates, etc.); and alleviating gaps between the “haves” and “have nots” in the city of New Orleans. Such policies and procedures will go a long way in better preparing public housing communities and residents to be able to withstand the next big storm.

Summary

Advocates and professionals primarily working with those living in poverty are often placed in difficult situations. Serving poor communities is a complicated process no matter where one lives. Political, social, economic and cultural forces often create added vulnerabilities for people who are poor. These same systems are slow to involve the communities that they attempt to serve and thus, often do not serve them well.

Following a disaster, the failings of these systems are often brought to light. Such is the case in New Orleans following Hurricane Katrina, and specifically in the public housing arena. Advocates struggle with serving their population in a system that often

fails to recognize the needs and value of the community it seeks to help. While experts can agree that many unethical decisions have been made in New Orleans' public housing recovery (and at the expense of the very population needing assistance), they must also find ways to continue to move forward and best serve their population. Current policies and procedures are being created that will have a great impact on the future of New Orleans' public housing and thus the individuals, families, and children who live there.

Developing safe, affordable, accessible, and environmentally-just public housing communities will impact not only the immediate concerns of residents, but will place these individuals and families in a better position to deal with future disasters. In order to achieve these goals, residents of public housing (former, current and future) must be brought to the table and their voices must be heard. Advocates recognize this need across the board and thus need assistance from the broader public to make this happen.

A disaster the size of Katrina, what Quarantelli (2006) refers to as a catastrophe, provides a great deal of insight into how society creates vulnerable populations through its policies as well as the construction of its communities. The opportunity of such a storm is the potential to recognize these issues during the recovery phase and to then make changes to improve the quality of life for those who are often left without a voice. By understanding the environmental injustices that have taken place following Hurricane Katrina and moving forward to both correct these policies and reduce their negative impact on populations, this study may provide insight that is transferrable, allowing other communities throughout the world to seek environmental justice as well. Such changes can alter the outcome of future storms and improve the lives of many people previously considered vulnerable.

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APPENDICES

Appendix A

HANDWRITTEN FORMS WILL NOT BE ACCEPTED

<h2 style="margin: 0;">Application for Review of Human Subjects Research</h2> <p style="margin: 0;">Submitted to the Oklahoma State University Institutional Review Board Pursuant to 45 CFR 46</p>		<p style="margin: 0;">IRB Number</p> <p style="margin: 0;">FOR OFFICE USE ONLY</p>
<p>Title of Project: ENVIRONMENTAL JUSTICE AFTER HURRICANE KATRINA: A DELPHI APPROACH TO DETERMINING THE ETHICS AND FUTURE OF PUBLIC HOUSING POLICIES IN NEW ORLEANS</p>		
<p>Is the Project externally funded? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, complete the following: <input type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal</p> <p>Agency: _____ Grant No: _____ OSU Routing No: _____</p>		
<p>Type of Review Requested: <input type="checkbox"/> Exempt <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Expedited Special Population <input type="checkbox"/> Full Board</p>		
<p>Principal Investigator(s): <i>I acknowledge that this represents an accurate and complete description of my research. If there are additional PIs, provide information on a separate sheet.</i></p>		
<p>Jennifer Sunshine Cowan _____ Name of Primary PI (typed)</p> <p>Environmental Sciences Program _____ Department</p> <p>1725 Running Branch Rd. Edmond 73013 _____ PI's Address (Street, City, State, Zip)</p>	<p>_____ Signature of PI</p> <p>_____ Graduate College College</p> <p>405-834-3682 _____ Phone</p>	<p>01-15-2009 _____ Date</p> <p>_____ Jcowan1@uco.edu E-Mail</p>
<p>Required IRB Training Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Training must be completed before application can be reviewed)</p>		
<p>_____ Name of Co-PI (typed)</p> <p>_____ Department</p> <p>_____ PI's Address</p>	<p>_____ Signature of Co-PI</p> <p>_____ College</p> <p>_____ Phone</p>	<p>_____ Date</p> <p>_____ E-Mail</p>
<p>Required IRB Training Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No (Training must be completed before application can be reviewed)</p>		

Adviser (complete if PI is a student): <i>I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected.</i>		
Dr. Lowell Caneday Adviser's Name (typed)	Signature of Adviser	01-15-2009 Date
Leisure Studies Department	Education College	
184 CRC Adviser's Address	405-744-5503 Phone	Lowell.Caneday@okstate.edu E-Mail
Required IRB Training Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Training must be completed before application can be reviewed)		

NOTE: If sufficient space is not provided below for a complete answer in sufficient detail for the reviewer to fully understand what is being proposed, please use additional pages as necessary.

<p>1. Describe the purpose and the research problem in the proposed study.</p> <p>Better understanding the events following Hurricane Katrina in New Orleans, especially those that affect vulnerable populations (including residents of public housing), can aid in an expanded definition of environmental justice. Utilizing the Delphi method to ascertain expert opinion and forecasting of the public housing events in New Orleans, this research seeks to determine the ethics of the events taking place and to predict the future of public housing in the New Orleans area. Research results may be able to broaden the definition of environmental justice to include the circumstances in which governments provide public housing to residents. Expert opinion regarding the current and future status of public housing in New Orleans will serve to shape the ongoing debate and controversy about public housing policy following Hurricane Katrina.</p> <p>2. (a) Describe the subjects of this study:</p> <p>1) Describe the sampling population: Key informants will be professionals and advocates in the New Orleans area with expertise in the fields of environmental law, public housing, sociology, disaster recovery, community development, sociology, or the like. These individuals will be performing within the scope of their existing employment and/or advocacy efforts and therefore no personal trauma (from discussing post-Katrina events) is likely to result.</p> <p>2) Describe the subject selection methodology (i.e. random, snowball, etc): Meetings will be held with University of New Orleans' faculty and disaster recovery professionals in the New Orleans' area. Through these contacts, the researcher will gain access to key informants in New Orleans in the areas of environmental law, public housing, community development, disaster recovery, sociology, or related fields. The investigator will follow-up with this group as a convenience sample.</p> <p>3) Describe the procedures to be used to recruit subjects. Include copies of scripts, flyers, advertisements, posters or letters to be used: Purposive/Judgemental sampling will be used, followed by snowball sampling. The investigator will meet with existing New Orleans'</p>

contacts who are professionals in the sociology/disaster recovery fields. Meetings may include face-to-face interactions, email, or phone conversations. These professionals will provide contact information for additional professionals and advocates in the area with expertise in the areas of environmental law, public housing, community development, disaster recovery, sociology, or related fields. All professionals and advocates will be asked to provide the names of others in the field, if needed. A script is attached for subject recruitment.

- 4) Number of subjects expected to participate: **Approximately 10 – 12 subjects are expected to participate in this study.**
- 5) How long will the subjects be involved: **Subjects will participate in a series of rounds (as delineated by Delphi method procedures). Depending on the number of rounds and the schedule availability of participants, the subjects will be involved in this research approximately six to eight weeks.**
- 6) Describe the calendar time frame for gathering the data using human subjects: **The calendar time frame for gathering data with participants spans mid-February through mid-April, 2009.**
- 7) Describe any follow-up procedures planned: **According to Loo (2002), a shared characteristic of the Delphi approach is a “final report of results and possible action plans” (p. 763). Therefore, the results and any possible action plans will be shared with participants once the data have been analyzed.**

(b) Are any of the subjects under 18 years of age? ☐ Yes ☒ No

If Yes, you must comply with special regulations for using children as subjects. Please refer to IRB Guide.

3. Provide a detailed description of any methods, procedures, interventions, or manipulations of human subjects or their environments and/or a detailed description of any existing datasets to be accessed for information. Include copies of any questionnaires, tests, or other written instruments, instructions, scripts, etc., to be used.

The investigator will use the Delphi technique to gather the opinions and predictions of key experts regarding the public housing matter in New Orleans post Katrina. To qualify for the study, key informants will be professionals or advocates in the fields of environmental law, public housing, community development, disaster recovery, sociology or the like. In the first round, a series of qualitative questions will be sent to the panelists (Vázquez-Ramos, et al., 2007; Mullen, 2003; Greator & Dexter, 2000). These will include open-ended questions and ask participants to brain-storm issues, etc., surrounding the public housing controversy in New Orleans post-Katrina. Further rounds will include scores and responses from previous rounds. Authors note that “the [Delphi rounds] process terminates when an acceptable degree of consensus is reached” (De Villiers, et al., 2005, p. 639). Loo (2002) notes that in addition to reaching consensus, rounds should stop “... when results become too repetitive or when an impasse is reached” (p. 766). A modified Delphi approach will be used to measure key informants’ knowledge, opinions, concerns and predictions on the public housing issue in New Orleans post Hurricane Katrina. Survey questions regarding the beliefs, values and opinions underlying the current plans, lawsuits, and advocacy efforts related to public housing in New Orleans will be included in this measurement.

Meetings will be held with University of New Orleans’ faculty and disaster recovery professionals in the greater New Orleans’ area. Through these contacts, the researcher will gain access to key informants in

New Orleans in the areas of environmental law, public housing, community development, disaster recovery, and sociology. The investigator will follow-up with this group as a convenience sample. The researcher will meet with key informants and inform them of the risks and benefits to participating in the study. Each key informant will receive written details of the study as approved by the Oklahoma State University Institutional Review Board (IRB). Informants will provide consent in writing to the investigator, who will store all paperwork in a locked home or work office. Informants will be assured of confidentiality throughout the entire study. Once informants have completed a consent form, they will be asked to provide qualitative responses in the first round of questioning, followed by feedback on a scale of 1-5 in subsequent rounds regarding issues related to public housing in New Orleans. Experts will provide this information via mail or through electronic communication. The Delphi technique will undergo quantitative analysis; each item will be examined, observing the degree of consensus that key informants obtain. Qualitative data of consensus with key informants will be analyzed using a ranking method to assert the most critical issues currently faced in New Orleans' public housing arena as well as informants' perceptions on the public housing controversy.

An analysis of public documents, including the categorization of news articles and editorials from *The Times-Picayune* and other newspapers, will also take place. The investigator will perform quantitative and qualitative analyses of secondary sources, specifically newspaper articles. This analysis will include reviews of news articles and editorials on public housing and living standards in New Orleans post Katrina. The investigator will utilize quantitative methods to assess the number of articles appearing in *The Times-Picayune* and other major newspapers that address public housing in New Orleans post Hurricane Katrina. This method of assessment will provide an indicator as to the relative importance of this issue in the New Orleans area and throughout the world. Secondly, articles appearing in *The Times-Picayune* and other major newspapers will be qualitatively assessed in order to determine the "climate" surrounding the public housing decisions in the New Orleans area post Hurricane Katrina. No consent will be taken for this portion of the study as all documents are publicly accessible. The investigator will use a spreadsheet to complete analysis of the newspaper articles and editorials.

4. Will the subjects encounter the possibility of stress or psychological, social, physical, or legal risks that are greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests? ☐Yes ☒No

If Yes, please justify your position:

5. Will medical clearance be necessary for subjects to participate because of tissue or blood sampling, administration of substances such as food or drugs, or physical exercise conditioning? ☐Yes ☒No

If Yes, please explain how the clearance will be obtained:

6. Will the subjects be deceived or misled in any way? ☐Yes ☒No

If Yes, please explain:

7. Will information be requested that subjects might consider to be personal or sensitive? ☐Yes ☒No

If Yes, please explain:

<p>8. Will the subjects be presented with materials that might be considered to be offensive, threatening, or degrading? <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No</p> <p>If Yes, please explain, including measures planned for intervention if problems occur.</p>
<p>9. Will any inducements be offered to the subjects for their participation? <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No</p> <p>If Yes, please explain:</p> <p>NOTE: If extra course credit is offered, describe the alternative means for obtaining additional credit available to those students who do not wish to participate in the research project.</p>
<p>10. Will a written consent form (and assent form for minors) be used? <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No</p> <p>If Yes, please include the form(s). Elements of informed consent can be found in 45 CFR 46, Section 116. Also see the IRB Guide.</p> <p>If No, a waiver of written consent must be obtained from the IRB. Explain in detail why a written consent form will not be used and how voluntary participation will be obtained. Include any related material, such as a copy of a public notice, script, etc., that you will use to inform subjects of all the elements that are required in a written consent. Refer to IRB Guide.</p>
<p>11. Will the data be a part of a record that can be identified with the subject? <input checked="" type="checkbox"/>Yes <input type="checkbox"/>No</p> <p>If Yes, please explain:</p> <p>Participants will be responding via email, mail, or fax (as set forth by Loo, 2002); therefore, participant responses will be known to the researcher. Participants have anonymity within the Delphi study. Hasson, Keeney and McKenna (2002, p. 1012) notes that this is “quasi-anonymity” as panelists are known to the researchers and each other, but their comments and scoring remain “strictly anonymous.” Once the researcher compiles and scores the questions of each round, results will be sent to all participants for continued group communication. When these results are forwarded to participants, no identifiers will be used that connects a participant to his or her response. Furthermore, final results will be reported in the aggregate and all identifying communication will be destroyed.</p>
<p>12. Describe the steps you are taking to protect the confidentiality of the subjects and how you are going to advise subjects of these protections in the consent process.</p> <p>Participants will be ensured of privacy, security and confidentiality as items will be analyzed and scored by the Principle Investigator and reported in subsequent rounds to all participants without identifiers. All communication materials (i.e. email, fax, and handwritten logs of conversations) containing participant names will be viewed only by the Principle Investigator and will remain in the Principle Investigator's locked office at home or work. Once all rounds have been completed and data are successfully transcribed to a computer file (for reporting results in the aggregate), communication with identifiers will be shredded by a commercial shredder in the Kinesiology & Health Studies office at the University of Central Oklahoma. This will occur at the end of the summer 2009 semester. Only</p>

aggregate data will be maintained.

13. Will the subject's participation in a specific experiment or study be made a part of any record available to his or her supervisor, teacher, or employer? ☐ Yes ☒ No

If Yes, please describe:

14. Describe the benefits that might accrue to either the subjects or society. *Note that 45 CFR 46, Section 46.111(a)(2) requires that the risks to subjects be reasonable in relation to the anticipated benefits. The investigator should specifically state the importance of the knowledge that reasonably may be expected to result from this research.*

Benefits to subjects participating in this study include the ability to “tell their story” (which is often stated as an important part of the recovery process following disaster), as well as the potential to use their professional skills and knowledge to predict the future of and positively impact public housing policy in the New Orleans area. Participants will have the opportunity to move toward a shared consensus of the issues surrounding the public housing controversy and all results and potential action steps will be openly shared with subjects at the conclusion of the study. Benefits to society may occur as results of the study are distributed. These benefits include the possibility of expanding the term “environmental justice” to include circumstances in which governments provide public housing to low income residents. Such expansion of this term would add to scientific literature; furthermore, if environmental justice policies pertaining to public housing were adopted on a wide scale, such acts would potentially impact the lives of citizens worldwide. Presentations of data results may also influence public housing ethics and policies in areas outside of New Orleans.

Concurrence:

Department Head (typed)

Signature

Date

Department

**College Dean or Research
Director (typed)**

Signature

Date

College

Checklist for application submission:

- ☒ Completion of required IRB training
(<http://compliance.vpr.okstate.edu/hsp/requiredtraining.htm>)
- ☐ Grant Proposal, if research is externally funded*
- ☐ Outline or script of information to be provided prior to subjects' agreement to participate

- ☐ Copies of flyers, announcements or other forms of recruitment
- ☐ Informed consent/assent forms
- ☐ Instrument(s) [questionnaire, survey, tests]
- ☐ Resumes or CV's for all PIs (student or faculty) and advisors (4 page maximum for each)
- ☐ Department/college/division signatures

*For unfunded research, including student theses and dissertations, no research plan is required, however, detailed information about the research must be provided in the application.

Number of copies to be submitted:

One (1) fully signed, single sided copy of the application and associated attachments

NOTE:

1. Any changes in the project after approval by the IRB must be resubmitted as a modification for review by the IRB before approval is granted. Modifications do not change the period of initial approval.
2. Approval is granted for one year maximum. Annual requests must be made to the IRB for continuation, as long as the research continues. Forms for continuation and modification are available on the web at <http://compliance.vpr.okstate.edu/hsp/forms.htm>

For assistance, please contact the Office of University Research Compliance at 405-744-1676

Appendix B

Oklahoma State University Institutional Review Board

Date : Friday, February 20, 2009

IRB Application No GU091

Proposal Title: Environmenatal Justice After Hurricane Katrina: A Delphi Approach to Determining the Ethics and Future of Public Housing Policies in New Orleans

Principal Investigator(s) :

Jennifer Sunshine Cowan
1725 Running Branch Road
Edmond, OK 73013

Lowell Caneday
184 Colvin Center
Stillwater, OK 74075

Reviewed and

Processed as: Expedited

Approval Status Recommended by Reviewer(s) : Pending Revision

There are revisions to your application to the IRB, which must be completed satisfactorily before your protocol will be approved. They are listed on the following page.

Please submit a revised IRB application incorporating and HIGHLIGHTING the changes listed. The revised application does not need to be signed. If any changes are required to your consent form, you must submit a new consent form incorporating the changes.

The material containing your revisions should be returned to the IRB Office, 219 Cordell North, Stillwater, OK 74078. These revisions will be reviewed by the IRB Chair and/or the review committee of the IRB. When all outstanding issues have been addressed satisfactorily, you will receive an approval letter from the Chair of the IRB.

You may not begin this research until these revisions have been made and the IRB has granted final approval to conduct research using human subjects under this protocol. You will be allowed 60 days to respond satisfactorily to the revisions required by the IRB. After that period of time, your protocol will be CLOSED.

If you have questions or wish to discuss the reviewers' comments, please contact Beth McTernan at 405-744-5700 or via e-mail at beth.mcternan@okstate.edu.

**Oklahoma State University
Institutional Review Board
Reviewer Comments**

Date : Monday, February 23, 2009

IRB Application No GU091

Proposal Title: Environmenatal Justice After Hurricane Katrina: A Delphi Approach to Determining the Ethics and Future of Public Housing Policies in New Orleans

✓ As each subsequent round of questions is developed, it will need to be submitted to the IRB as a modification for review and approval prior to distribution to the participants.

✓ PI does not address how the informed consent will be provided to respondents. Will the PI go over the informed consent with the respondent verbally once the individual has agreed to participate, or will communication only occur via mail, e-mail or fax? Please clarify the process. Please change "principle" to "principal" in the IC document. ✓

Please indicate where the data will be held - home or work is too vague - and may not provide a feeling of security for participants. Will the data be coded in any way to increase confidentiality? ✓

✓ It may be wise to provide a section on the informed consent where experts can indicate whether they wish to be identified in published documents. Some may wish to have their participation confidential even in the publication stages - having a signature line for this can avoid any confusion.

✓ In the consent form, add the affiliation (OSU) after the Investigator name.

Comment - no response required - Reviewer has one observation about the questions the PI is using that she might want to consider. I noticed that some subjects will be asked about the involvement of key decision makers in shaping policy, but there were no questions about the involvement of other important stakeholders such as the potential residents of public housing.

Signature


Shelia Kennison, Chair, Institutional Review Board

Monday, February 23, 2009

Date

Appendix C

HANDWRITTEN FORMS WILL NOT BE ACCEPTED

Application for Review of Human Subjects Research Submitted to the Oklahoma State University Institutional Review Board Pursuant to 45 CFR 46		IRB Number FOR OFFICE USE ONLY
Title of Project: ENVIRONMENTAL JUSTICE AFTER HURRICANE KATRINA: A DELPHI APPROACH TO DETERMINING THE ETHICS AND FUTURE OF PUBLIC HOUSING POLICIES IN NEW ORLEANS		
Is the Project externally funded? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, complete the following: <input type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal Agency: Grant No: OSU Routing No:		
Type of Review Requested: <input type="checkbox"/> Exempt <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Expedited Special Population <input type="checkbox"/> Full Board		
Principal Investigator(s): <i>I acknowledge that this represents an accurate and complete description of my research. If there are additional PIs, provide information on a separate sheet.</i>		
Jennifer Sunshine Cowan Name of Primary PI (typed)	_____ Signature of PI	01-15-2009 Date
Environmental Sciences Program Department	Graduate College College	
1725 Running Branch Rd. Edmond 73013 PI's Address (Street, City, State, Zip)	405-834-3682 Phone	Jcowan1@uco.edu E-Mail
Required IRB Training Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Training must be completed before application can be reviewed)		
_____ Name of Co-PI (typed)	_____ Signature of Co-PI	_____ Date
_____ Department	_____ College	
_____ PI's Address	_____ Phone	_____ E-Mail
Required IRB Training Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No (Training must be completed before application can be reviewed)		

Adviser (complete if PI is a student): *I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected.*

Dr. Lowell Caneday
Adviser's Name (typed)

Signature of Adviser

01-15-2009
Date

Leisure Studies
Department

Education
College

184 CRC

405-744-5503

Lowell.Caneday@okstate.edu

Adviser's Address

Phone

E-Mail

Required IRB Training Complete: ☒ Yes ☐ No
(Training must be completed before application can be reviewed)

NOTE: If sufficient space is not provided below for a complete answer in sufficient detail for the reviewer to fully understand what is being proposed, please use additional pages as necessary.

1. Describe the purpose and the research problem in the proposed study.

Better understanding the events following Hurricane Katrina in New Orleans, especially those that affect vulnerable populations (including residents of public housing), can aid in an expanded definition of environmental justice. Utilizing the Delphi method to ascertain expert opinion and forecasting of the public housing events in New Orleans, this research seeks to determine the ethics of the events taking place and to predict the future of public housing in the New Orleans area. Research results may be able to broaden the definition of environmental justice to include the circumstances in which governments provide public housing to residents. Expert opinion regarding the current and future status of public housing in New Orleans will serve to shape the ongoing debate and controversy about public housing policy following Hurricane Katrina.

4. (a) Describe the subjects of this study:

- 8) Describe the sampling population: **Key informants will be professionals and advocates in the New Orleans area with expertise in the fields of environmental law, public housing, sociology, disaster recovery, community development, sociology, or the like. These individuals will be performing within the scope of their existing employment and/or advocacy efforts and therefore no personal trauma (from discussing post-Katrina events) is likely to result.**
- 9) Describe the subject selection methodology (i.e. random, snowball, etc): **Meetings will be held with University of New Orleans' faculty and disaster recovery professionals in the New Orleans' area. Through these contacts, the researcher will gain access to key informants in New Orleans in the areas of environmental law, public housing, community development, disaster recovery, sociology, or related fields. The investigator will follow-up with this group as a purposive/judgmental sample.**
- 10) Describe the procedures to be used to recruit subjects. Include copies of scripts, flyers, advertisements, posters or letters to be used: **Purposive/Judgmental sampling will be used, followed by snowball sampling. The investigator will meet with existing New Orleans' contacts who are professionals in the sociology/disaster recovery fields. Meetings may include face-to-face interactions, email, or phone conversations. These professionals will provide contact information for additional professionals and advocates in the area with expertise in the areas of environmental law, public housing, community development, disaster recovery, sociology, or related fields. All professionals and advocates will be asked to provide the names of others in the field, if needed. A script is attached for subject recruitment.**
- 11) Number of subjects expected to participate: **Approximately 10 – 12 subjects are expected to participate in this study.**
- 12) How long will the subjects be involved: **Subjects will participate in a series of rounds (as delineated by Delphi method procedures). Depending on the number of rounds and the schedule availability of participants, the subjects will be involved in this research approximately six to eight weeks.**
- 13) Describe the calendar time frame for gathering the data using human subjects: **The calendar time frame for gathering data with participants spans mid-February through mid-April, 2009.**
- 14) Describe any follow-up procedures planned: **According to Loo (2002), a shared characteristic of the Delphi approach is a "final report of results and possible action plans" (p. 763). Therefore, the results and any possible action plans will be shared with participants once**

the data have been analyzed.

(b) Are any of the subjects under 18 years of age? ☐ Yes ☒ No

If Yes, you must comply with special regulations for using children as subjects. Please refer to IRB Guide.

5. Provide a detailed description of any methods, procedures, interventions, or manipulations of human subjects or their environments and/or a detailed description of any existing datasets to be accessed for information. Include copies of any questionnaires, tests, or other written instruments, instructions, scripts, etc., to be used.

The investigator will use the Delphi technique to gather the opinions and predictions of key experts regarding the public housing matter in New Orleans post Katrina. To qualify for the study, key informants will be professionals or advocates in the fields of environmental law, public housing, community development, disaster recovery, sociology or the like. In the first round, a series of qualitative questions will be sent to the panelists (Vázquez-Ramos, et al., 2007; Mullen, 2003; Greateorex & Dexter, 2000). These will include open-ended questions and ask participants to brain-storm issues, etc., surrounding the public housing controversy in New Orleans post-Katrina.

As each subsequent round of questions is developed, that set of questions will be submitted to the OSU IRB as a modification for review and approval prior to distribution to participants. Further rounds will include scores and responses from previous rounds. Authors note that “the [Delphi rounds] process terminates when an acceptable degree of consensus is reached” (De Villiers, et al., 2005, p. 639). Loo (2002) notes that in addition to reaching consensus, rounds should stop “... when results become too repetitive or when an impasse is reached” (p. 766). A modified Delphi approach will be used to measure key informants’ knowledge, opinions, concerns and predictions on the public housing issue in New Orleans post Hurricane Katrina. Survey questions regarding the beliefs, values and opinions underlying the current plans, lawsuits, and advocacy efforts related to public housing in New Orleans will be included in this measurement.

Meetings will be held with University of New Orleans’ faculty and disaster recovery professionals in the greater New Orleans’ area. Through these contacts, the researcher will gain access to key informants in New Orleans in the areas of environmental law, public housing, community development, disaster recovery, and sociology. The investigator will follow-up with this group as a convenience sample. The researcher will speak with key informants and inform them of the risks and benefits to participating in the study. Each key informant will receive written details of the study as approved by the Oklahoma State University Institutional Review Board (IRB). **The investigator will email, fax or mail (depending upon their request and/or the contact information available) an informed consent document to potential volunteer participants. Once a key expert has agreed to participate, the researcher will review the informed consent with volunteer participants verbally over the phone. Informants will provide consent in writing to the investigator, who will store all paperwork in a locked portable filing box in the home or work office.** Informants will be assured of confidentiality throughout the entire study.

Once informants have completed a consent form, they will be asked to provide qualitative responses in the first round of questioning, followed by feedback on a scale of 1-5 in subsequent rounds regarding issues related to public housing in New Orleans. Experts will provide this information via mail or through electronic communication. The Delphi technique will undergo quantitative analysis; each item

will be examined, observing the degree of consensus that key informants obtain. Qualitative data of consensus with key informants will be analyzed using a ranking method to assert the most critical issues currently faced in New Orleans' public housing arena as well as informants' perceptions on the public housing controversy.

An analysis of public documents, including the categorization of news articles and editorials from *The Times-Picayune* and other newspapers, will also take place. The investigator will perform quantitative and qualitative analyses of secondary sources, specifically newspaper articles. This analysis will include reviews of news articles and editorials on public housing and living standards in New Orleans post Katrina. The investigator will utilize quantitative methods to assess the number of articles appearing in *The Times-Picayune* and other major newspapers that address public housing in New Orleans post Hurricane Katrina. This method of assessment will provide an indicator as to the relative importance of this issue in the New Orleans area and throughout the world. Secondly, articles appearing in *The Times-Picayune* and other major newspapers will be qualitatively assessed in order to determine the "climate" surrounding the public housing decisions in the New Orleans area post Hurricane Katrina. No consent will be taken for this portion of the study as all documents are publicly accessible. The investigator will use a spreadsheet to complete analysis of the newspaper articles and editorials.

4. Will the subjects encounter the possibility of stress or psychological, social, physical, or legal risks that are greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests? ☐Yes ☒No

If Yes, please justify your position:

5. Will medical clearance be necessary for subjects to participate because of tissue or blood sampling, administration of substances such as food or drugs, or physical exercise conditioning? ☐Yes ☒No

If Yes, please explain how the clearance will be obtained:

6. Will the subjects be deceived or misled in any way? ☐Yes ☒No

If Yes, please explain:

7. Will information be requested that subjects might consider to be personal or sensitive? ☐Yes ☒No

If Yes, please explain:

8. Will the subjects be presented with materials that might be considered to be offensive, threatening, or degrading? ☐Yes ☒No

If Yes, please explain, including measures planned for intervention if problems occur.

9. Will any inducements be offered to the subjects for their participation? ☐Yes ☒No

If Yes, please explain:

NOTE: If extra course credit is offered, describe the alternative means for obtaining additional credit available to those students who do not wish to participate in the research project.

10. Will a written consent form (and assent form for minors) be used? ☒Yes ☐No

<p>If Yes, please include the form(s). Elements of informed consent can be found in 45 CFR 46, Section 116. Also see the IRB Guide.</p> <p>If No, a waiver of written consent must be obtained from the IRB. Explain in detail why a written consent form will not be used and how voluntary participation will be obtained. Include any related material, such as a copy of a public notice, script, etc., that you will use to inform subjects of all the elements that are required in a written consent. Refer to IRB Guide.</p>
<p>11. Will the data be a part of a record that can be identified with the subject? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If Yes, please explain:</p> <p>Participants will be responding via email, mail, or fax (as set forth by Loo, 2002); therefore, participant responses will be known to the researcher. Participants have anonymity within the Delphi study. Hasson, Keeney and McKenna (2002, p. 1012) notes that this is “quasi-anonymity” as panelists are known to the researchers and each other, but their comments and scoring remain “strictly anonymous.” Once the researcher compiles and scores the questions of each round, results will be sent to all participants for continued group communication. When these results are forwarded to participants, no identifiers will be used that connects a participant to his or her response. Furthermore, final results will be reported in the aggregate and all identifying communication will be destroyed.</p> <p>The principal investigator is the only individual who will access the stored data and the only person who will know which participants provided which answers. Hard copies of data with identifiers will only be kept until the information is placed in a computer file as a group without any identifiers (i.e. stored and reported in the aggregate). These hard copies will be stored in a locked portable filing box in the home or work office. By July 2009, all communication (e.g. email, fax, mail, handwritten notes of conversations, etc.) with key experts’ identifying information will be shredded in a commercial shredder. Data will be reported as a whole; while experts will be acknowledged, individual responses with names will never be shared or reported.</p>
<p>12. Describe the steps you are taking to protect the confidentiality of the subjects and how you are going to advise subjects of these protections in the consent process.</p> <p>Participants will be ensured of privacy, security and confidentiality as items will be analyzed and scored by the Principal Investigator and reported in subsequent rounds to all participants without identifiers. All communication materials (i.e. email, fax, and handwritten logs of conversations) containing participant names will be viewed only by the Principal Investigator and will remain in the Principal Investigator's locked portable filing box in the home or work office. Once all rounds have been completed and data are successfully transcribed to a computer file (for reporting results in the aggregate), communication with identifiers will be shredded by a commercial shredder in the Kinesiology & Health Studies office at the University of Central Oklahoma. This will occur at the end of the summer 2009 semester. Only aggregate data will be maintained.</p>
<p>13. Will the subject's participation in a specific experiment or study be made a part of any record available to his or her supervisor, teacher, or employer? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes, please describe:</p>
<p>14. Describe the benefits that might accrue to either the subjects or society. Note that 45 CFR 46, Section 46.111(a)(2) requires that the risks to subjects be reasonable in relation to the anticipated benefits. The investigator should specifically state the importance of the knowledge that reasonably may be expected to result from this research.</p> <p>Benefits to subjects participating in this study include the ability to “tell their story” (which is often stated as an important part of the recovery process following disaster), as well as the potential to use their professional skills and knowledge to predict the future of and positively impact public housing policy in the New Orleans area. Participants will have the opportunity to move toward a</p>

shared consensus of the issues surrounding the public housing controversy and all results and potential action steps will be openly shared with subjects at the conclusion of the study. Benefits to society may occur as results of the study are distributed. These benefits include the possibility of expanding the term “environmental justice” to include circumstances in which governments provide public housing to low income residents. Such expansion of this term would add to scientific literature; furthermore, if environmental justice policies pertaining to public housing were adopted on a wide scale, such acts would potentially impact the lives of citizens worldwide. Presentations of data results may also influence public housing ethics and policies in areas outside of New Orleans.

Concurrence:

Dr. Will Focht Department Head (typed)	Signature	Date	Environmental Science Department
College Dean or Research Director (typed)	Signature	Date	Arts and Science College

Checklist for application submission:

- ☒ Completion of required IRB training
(<http://compliance.vpr.okstate.edu/hsp/requiredtraining.htm>)
- ☐ Grant Proposal, if research is externally funded*
- ☒ Outline or script of information to be provided prior to subjects' agreement to participate
- ☐ Copies of flyers, announcements or other forms of recruitment
- ☒ Informed consent/assent forms
- ☒ Instrument(s) [questionnaire, survey, tests]
- ☒ Resumes or CV's for all PIs (student or faculty) and advisors (4 page maximum for each)
- ☒ Department/college/division signatures

*For unfunded research, including student theses and dissertations, no research plan is required, however, detailed information about the research must be provided in the application.

Number of copies to be submitted:

One (1) fully signed, single sided copy of the application and associated attachments

NOTE:

1. Any changes in the project after approval by the IRB must be resubmitted as a modification for review by the IRB before approval is granted. Modifications do not change the period of initial approval.
3. Approval is granted for one year maximum. Annual requests must be made to the IRB for continuation, as long as the research continues. Forms for continuation and modification are available on the web at <http://compliance.vpr.okstate.edu/hsp/forms.htm>

For assistance, please contact the Office of University Research Compliance at 405-744-1676

Appendix D

Oklahoma State University Institutional Review Board

Date: Tuesday, March 03, 2009
IRB Application No: GU091
Proposal Title: Environmental Justice After Hurricane Katrina: A Delphi Approach to
Determining the Ethics and Future of Public Housing Policies in New Orleans

Reviewed and Processed as: Expedited

Status Recommended by Reviewer(s): Approved Protocol Expires: 3/2/2010

Principal

Investigator(s):

Jennifer Sunshine Cowan	Lowell Caneday
1725 Running Branch Road	184 Colvin Center
Edmond, OK 73013	Stillwater, OK 74075

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

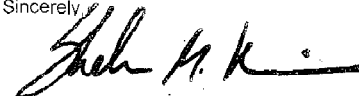
X The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,



Shelia Kennison, Chair
Institutional Review Board

Appendix E

APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH

MODIFICATION

Submitted to the
OKLAHOMA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD

Please complete, sign, and date this form. Submit one copy of this form plus one copy of any revised materials to the Office of University Research Compliance, 219 Cordell North, Stillwater, OK 74078, (405) 744-5700 (ph), (405) 744-4335 (fax), irb@okstate.edu. Modification may not be implemented until they have received approval. *The approval of this modification does not change the original period of approval of your IRB application.*

Title of Project: ENVIRONMENTAL JUSTICE AFTER HURRICANE KATRINA: A DELPHI APPROACH TO

DETERMINING THE ETHICS AND FUTURE OF PUBLIC HOUSING POLICIES IN NEW ORLEANS

Current IRB Approval Number: GU091

Expiration Date:

Principal Investigator(s): I acknowledge that this represents an accurate and complete description of my research.

J. Sunshine Cowan
Name of Primary PI

Signature of PI

05/19/2009
Date

Sunshine.Cowan@okstate.edu
E-Mail

Environmental Sciences Program

Graduate College

Department

College

1725 Running Branch Rd. Edmond, OK 73013
PI's Address (Street, City, State, Zip)

405-834-3682
Phone

Sunshine.Cowan@okstate.edu
E-Mail

Name of PI (typed)

Signature of PI

Date

E-Mail

Department

College

PI's Address

Phone

E-Mail

Adviser (complete if PI is a student): I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected.

Dr. Lowell Caneday
Adviser's Name

Signature of Adviser

Date

Lowell.Caneday@okstate.edu
E-Mail

Leisure Studies
Department

Education
College

184 Colvin Recreation Center Stillwater, OK 74078

405-744-5503

Lowell.Caneday@okstate.edu

Adviser's Address

Phone

E-Mail

1. Describe in detail the proposed changes, to include any change in title, methodology, sample size, sample population, assent or consent form, recruitment of subjects, principal investigator(s), research sites, etc.

This research utilizes the Delphi method in order to collect data among key experts regarding their insight, beliefs, knowledge, opinions and predictions of public housing in New Orleans post hurricane Katrina. This is the second round in this study which utilizes the Delphi method. The only change to this research is an update in the statements analyzed for the second round, as determined by the feedback provided by key experts in the first round.

The first round of open-ended questions was approved by the OSU IRB; this second round of questions is based on key expert answers to those first round questions. Consistent with the Delphi approach, statements have been created in a Likert scale format for this round in an effort to seek consensus among key experts in the study.

After this round, answers will be analyzed and sent back again (with any changes approved by IRB) for further revision and clarification if needed.

2. Explain the reason for the request if it involves the methodology/study design.

This request is required as this study utilizes the Delphi approach and subsequent rounds have updated information based on the input of key experts in previous rounds. All round two questions were created due to the feedback provided by key experts in round one.

3. Do these requested changes pose additional risks to subjects? ____ Yes ☒ No If yes, describe.

4. Submit all materials that are being revised, and highlight changes.

Round two questions attached; all questions are new.

Appendix F

Oklahoma State University Institutional Review Board

Date: Thursday, May 21, 2009 Protocol Expires: 3/2/2010
IRB Application No: GU091
Proposal Title: Environmenatal Justice After Hurricane Katrina: A Delphi Approach to
Determining the Ethics and Future of Public Housing Policies in New
Orleans
Reviewed and Processed as: Expedited
Modification

Status Recommended by Reviewer(s) **Approved**

Principal
Investigator(s):

Jennifer Sunshine Cowan ✓
1725 Running Branch Road
Edmond, OK 73013

Lowell Caneday
184 Colvin Center
Stillwater, OK 74075

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office **MUST** be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB.

- ☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

The reviewer(s) had these comments:

Addition of round 2 questions is approved.

Signature :


Sheila Kennison, Chair, Institutional Review Board

Thursday, May 21, 2009
Date

Appendix G

APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH

MODIFICATION

Submitted to the
OKLAHOMA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD

Please complete, sign, and date this form. Submit one copy of this form plus one copy of any revised materials to the Office of University Research Compliance, 219 Cordell North, Stillwater, OK 74078, (405) 744-5700 (ph), (405) 744-4335 (fax), irb@okstate.edu. Modification may not be implemented until they have received approval. *The approval of this modification does not change the original period of approval of your IRB application.*

Title of Project: ENVIRONMENTAL JUSTICE AFTER HURRICANE KATRINA: A DELPHI APPROACH TO

DETERMINING THE ETHICS AND FUTURE OF PUBLIC HOUSING POLICIES IN NEW ORLEANS

Current IRB Approval Number: GU091

Expiration Date: 03/02/2010

Principal Investigator(s): I acknowledge that this represents an accurate and complete description of my research.

J. Sunshine Cowan

06/02/2009

Sunshine.Cowan@okstate.edu

Name of Primary PI

Signature of PI

Date

E-Mail

Environmental Sciences Program

Graduate College

Department

College

1725 Running Branch Rd. Edmond, OK 73013

405-834-3682

Sunshine.Cowan@okstate.edu

PI's Address (Street, City, State, Zip)

Phone

E-Mail

Name of PI (typed)

Signature of PI

Date

E-Mail

Department

College

PI's Address

Phone

E-Mail

Adviser (complete if PI is a student): I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected.

Dr. Lowell Caneday

06/02/2009

Lowell.Caneday@okstate.edu

Adviser's Name

Signature of Adviser

Date

E-Mail

Leisure Studies

Education

Department

College

184 Colvin Recreation Center Stillwater, OK 74078

405-744-5503

Lowell.Caneday@okstate.edu

Adviser's Address

Phone

E-Mail

1. **Describe in detail the proposed changes, to include any change in title, methodology, sample size, sample population, assent or consent form, recruitment of subjects, principal investigator(s), research sites, etc.**

This research utilizes the Delphi method in order to collect data among key experts regarding their insight, beliefs, knowledge, opinions and predictions of public housing in New Orleans post hurricane Katrina. **This is the third round in this study which utilizes the Delphi method.** This round provides only those Likert Scale questions and responses from round two whereupon consensus was not attained by key experts. This round also provides an opportunity for respondents to qualitatively provide feedback on why they have answered in a manner that does not match group consensus.

The first and second rounds of questions were approved by the OSU IRB; this third round of questions is based on key expert answers to those questions. Consistent with the Delphi approach, statements that did not gain consensus have been included in this round in an effort to seek consensus and feedback among key experts in the study.

2. **Explain the reason for the request if it involves the methodology/study design.**

This request is required as this study utilizes the Delphi approach and subsequent rounds have updated information based on the input of key experts in previous rounds. All round three questions are included due to the feedback provided by key experts in rounds one and two.

3. **Do these requested changes pose additional risks to subjects? ____ Yes ☒ No If yes, describe.**

4. **Submit all materials that are being revised, and highlight changes.**

Round three questions are attached; all questions have been previously approved for use by the OSU IRB and were asked in round two. The only new material for this round is the ability for those experts who provided responses outside group consensus to qualitatively explain their position.

Appendix H

Oklahoma State University Institutional Review Board

Date: Monday, June 08, 2009 Protocol Expires: 3/2/2010
IRB Application No: GU091
Proposal Title: Environmental Justice After Hurricane Katrina: A Delphi Approach to Determining the Ethics and Future of Public Housing Policies in New Orleans
Reviewed and Processed as: Expedited
Modification
Status Recommended by Reviewer(s) **Approved**
Principal Investigator(s):
Jennifer Sunshine Cowan Lowell Caneday
1725 Running Branch Road 184 Colvin Center
Edmond, OK 73013 Stillwater, OK 74075

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office **MUST** be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB.

- ☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

The reviewer(s) had these comments:

Addition of round 3 questions is approved.

Signature :


Shelia Kennison, Chair, Institutional Review Board

Monday, June 08, 2009
Date

Appendix I

Recruitment Script (to be sent via email or spoken over phone)

Hello. My name is Sunshine Cowan and I am an Environmental Science doctoral candidate from Oklahoma State University. I am currently researching the public housing controversy in New Orleans post-Katrina for my dissertation. *Dr. Pam Jenkins/Dr. Shirley Laska/Other* provided me with your name and stated that you were a professional/advocate in the field of *environmental law/public housing/sociology/disaster recovery/community development/or other related field*.

I am contacting you today to see if you would be interested in participating in a study that

I am conducting to gain expert feedback on the public housing controversy in New Orleans post-Katrina. I am searching for experts in your field to help predict the future of public housing in New Orleans, discuss the ethics of events surrounding public housing issues, and to obtain your expert opinion on policy recommendations regarding public housing.

This study will be conducted via email (or mail or fax if you need). I am using the Delphi method to gain answers to survey questions. The Delphi method uses several rounds of questions to bring the opinions of experts together and attempt to gain a consensus regarding important issues, policy recommendations, etc. The first round is a set of 11 open-ended questions which seek your expert opinion and feedback. After that, subsequent rounds will ask you to agree or disagree with specific statements, given a scale of 1-5. I anticipate that we will have approximately 3-4 short rounds over the course of six – eight weeks.

As a professional/advocate in the field, this is an opportunity for you to share your expertise and to communicate your knowledge to others in an attempt to form a consensus about these very important issues. While your participation will be known by others in the study, your answers will never be tied to your name, and in that way they will remain confidential. I will compile all results and possible action plans after the study is completed and provide the information back to all participants. I hope that the information gained will positively impact public housing policy in the New Orleans area and also influence public housing ethics and policies in areas outside the city.

May I include you in this study? Do you have any questions for me?

Thank you for your time. I look forward to working with you / I appreciate your consideration.

Appendix J

INFORMED CONSENT

Project Title: Environmental justice after hurricane Katrina: A Delphi approach to determining the ethics and future of public housing policies in New Orleans

Investigator: J. Sunshine Cowan, ABD, MPH, CHES

Purpose: The purpose of this study is to research the opinions, beliefs, and predictions of key experts in the New Orleans area regarding the ethics and future of public housing post-Katrina. Key experts include those in the fields of environmental law, sociology, disaster recovery, public housing, community development, or similar disciplines. You have been selected to participate because of your professional affiliation and/or advocacy efforts.

Procedures: As a key expert and volunteer participant, you will be asked to respond to a series of short surveys via email (or by mail or fax, if you prefer). The first survey includes 11 open-ended questions seeking your input and expertise. The following surveys will be based on the answers of all participants to previous surveys and will include the degree of agreement you have with certain statements on a scale of 1-5. Rounds will continue until key experts have reached consensus (or gridlock has occurred). It is anticipated that there will be between three and four rounds of questions over the span of six to eight weeks.

Risks of Participation:

There are no known risks associated with this project which are greater than those ordinarily encountered in daily life.

Benefits: Benefits include the ability to share your knowledge and expertise as well as the potential to predict the future of and positively impact public housing policy in the New Orleans area. Participants will have the opportunity to move toward a shared consensus of the issues surrounding the public housing controversy and all results and potential action plans will be openly shared with subjects at the conclusion of the study.

Confidentiality: Responses to surveys will be sent to the Principal Investigator, Sunshine Cowan, who will store all data in a locked portable filing box in the home or work office. The principal investigator is the only individual who will

access the stored data and the only person who will know which participants provided which answers. Hard copies of data will only be kept until the information is placed in a computer file as a group without any identifiers (i.e. stored and reported in the aggregate). These hard copies will be stored in a locked portable filing box in the home or work office. By July 2009, all communication (e.g. email, fax, mail, handwritten notes of conversations, etc.) with key experts' identifying information will be shredded in a commercial shredder. Data will be reported as a whole; while experts will be acknowledged, individual responses with names will never be shared or reported.

Foreseeable risks to maintaining confidentiality include housekeeping stumbling upon records or individuals other than the Principal Investigator accessing email or fax communications. To minimize this risk, data will be kept in a locked filing box and the computer will be locked when the investigator is out of the office. It will be requested that any experts who choose to communicate via fax do so with a cover letter marked "CONFIDENTIAL" across the top. The investigator's office fax will be utilized for this purpose and the office administrative assistants will be trained on the procedure for taking these communications and placing them in a sealed envelope before providing them to the investigator. It will be requested that experts who choose to communicate via mail mark "CONFIDENTIAL" on the outside of the mailing envelope.

The records of this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. It is possible that the consent process and data collection will be observed by research oversight staff responsible for safeguarding the rights and wellbeing of people who participate in research.

Compensation: There is no financial compensation for participation in this study and no penalty for refusing to participate. You may quit participating at any time without penalty.

Contacts: If you have questions about this research or about your rights as a research volunteer, you may contact:

J. Sunshine Cowan, Principal Investigator
Oklahoma State University
1725 Running Branch Rd.

Edmond, OK 73013
405-285-8517
Sunshine.Cowan@okstate.edu

Dr. Lowell Caneday, Professor
Oklahoma State University
184 Colvin Recreation Center
Stillwater, OK 74078
405-744-5503
Lowell.Caneday@okstate.edu

If you have questions about your rights as a research volunteer, you may contact:

Dr. Shelia Kennison, IRB Chair
219 Cordell North
Stillwater, OK 74078
405-744-1676
irb@okstate.edu

Participant Rights: Participating in this study is voluntary and participants may discontinue research at any time without reprisal or penalty. There are no risks to withdrawing from the study. Subject participation may be terminated for non-response.

Signatures:

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy of this form has been given to me.

Signature of Participant Date

I do ____ / do not ____ wish to be identified as a key expert in any future published documents.

Signature of Participant Date

I certify that I have personally explained this document before requesting that the participant sign it.

Signature of Researcher Date

Appendix K

Thank you for your participation in this study , which seeks to gather your input regarding current and future public housing policies and practices in the New Orleans area. Because this study utilizes the Delphi method, you will be asked a series of questions in a few “rounds.” After each round, your answers will be analyzed with those of other participants and then sent back to you for further revision and clarification, using a 5-point scale for agreement or disagreement.

This study seeks to obtain your insight, beliefs, knowledge, opinions and predictions regarding public housing in New Orleans. While your participation in this research remains confidential, it is important to note that anonymity in the Delphi approach may best be described as “quasi-anonymity” as panelists are known to the researcher and to each other, but their comments and scoring remain “strictly anonymous” (Hasson, Keeney, & McKenna, 2000, p. 1012).

Following the model of other studies utilizing the Delphi approach, the first round of questions are open-ended and seek to gain your insight into this issue as an expert in the area. Many of the questions refer to your opinion or knowledge. Please answer thoroughly and provide all information that you deem relevant to the issue of public housing in New Orleans. You may answer directly on this form in the text box provided. When you have completed the questionnaire, please save and email it to sunshine.cowan@okstate.edu.

Thank you for your time.

1. What ethical considerations, if any, are important when determining the future of public housing in New Orleans?
2. What current practices, if any, in the area of public housing in New Orleans are working well?
3. What current practices, if any, in the area of public housing in New Orleans are of concern to you?
4. Who are the key decision makers regarding the future policies and practices of public housing in New Orleans?
5. What key decision makers, if any, are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans?
6. Have lawsuits influenced the current and future policies and practices of public housing in New Orleans? If so, how?
7. In the future, will public housing in New Orleans be vastly different than it was prior to Hurricane Katrina? Why or why not?

8. What environmental issues, if any, are of concern to you regarding public housing in New Orleans (now and in the future)?
9. What public health issues, if any, are of concern to you regarding public housing in New Orleans (now and in the future)?
10. What do you believe to be the top concerns of public housing policy in New Orleans (now and in the future)?
11. Please list any other issues regarding public housing post-Katrina that may be missing from this list.

Appendix L

Thank you for your participation in this study, which seeks to gather your input regarding current and future public housing policies and practices in the New Orleans area. **This is the second round in this study which utilizes the Delphi method.** After this round, your answers will be analyzed with those of other participants and then sent back to you for further revision and clarification, using a 5-point scale for agreement or disagreement. This study seeks to obtain your insight, beliefs, knowledge, opinions and predictions regarding public housing in New Orleans. While your participation in this research remains confidential, it is important to note that anonymity in the Delphi approach may best be described as “quasi-anonymity” as panelists are known to the researcher and to each other, but their comments and scoring remain “strictly anonymous” (Hasson, Keeney, & McKenna, 2000, p. 1012).

Please select only one answer per question as it pertains to your opinions, beliefs, knowledge, insight or predictions regarding public housing in New Orleans. You may answer directly on this form by checking the text box of your choice. When you have completed the questionnaire, please save and email it to sunshine.cowan@okstate.edu. Thank you for your time.

- 1. Closing four large public housing units was unethical in that it denied the right of return to thousands of New Orleans’ residents.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 2. The City Council’s vote to demolish four large public housing units was unethical in that many of the units were repairable.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 3. The City Council’s vote to demolish four large public housing units was unethical in that it set a policy that excluded individuals.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 4. An ethical decision for public housing in New Orleans would be to replace the public housing units one at a time.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 5. An important ethical decision for public housing in New Orleans is the setting of new admission requirements for redeveloped sites such as work preferences.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 6. An important ethical issue for public housing in New Orleans is the involvement of public housing residents in planning.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 7. An important ethical issue in public housing in New Orleans is determining whether new sites will be planned using mixed incomes or 100% affordable housing.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 8. An important ethical issue in public housing in New Orleans is determining whether it is the responsibility of the larger society to provide housing for those who are unable to do so for themselves due to poverty, disability and other socio-economic driving factors.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 9. An important ethical issue in public housing in New Orleans is determining if there is right of return for public housing residents, and if so, providing public housing accordingly.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 10. Section 8 housing is a policy that is still working well in New Orleans.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

- 11. Emergency rental assistance programs (run by local nonprofit organizations, not the federal government) are working well in New Orleans.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

12. Resident management corporations (RMCs) are working well in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

13. Federally run public housing, rental assistance, and FEMA Trailer programs are not working well in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

14. No current practices in the area of public housing are currently working well.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

15. Of current concern in the area of public housing in New Orleans is the rebuilding of new public housing units.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

16. Of current concern in the area of public housing in New Orleans is maintaining existing public housing units.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

17. Of current concern in the area of public housing in New Orleans is the mismanagement of funds.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

18. Of current concern in the area of public housing in New Orleans is the lack of public housing resident involvement in planning and decision making.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

19. Of current concern in the area of public housing in New Orleans is the demolition of the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper).

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

20. Of current concern in the area of public housing in New Orleans is the focus on the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper) at the expense of other public housing units.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

21. Of current concern in the area of public housing in New Orleans is the lack of plans for disability-accessible housing for non-elderly residents in the near future.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

22. The Housing Authority of New Orleans (HANO) is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

23. The City of New Orleans is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

24. The Department of Housing and Urban Development (HUD) is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

25. The New Orleans City Council is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

26. Citizens of New Orleans who vote are key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

27. Mayor Nagin is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

28. Developers are key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

29. Public housing resident leaders are key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

30. Congressional leaders are key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

31. The receivership team is comprised of key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

32. Legal services are key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

33. The Louisiana Housing Finance Agency (LHFA) is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

34. Resident council representatives are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

35. Residents in evacuee cities are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

36. Local community organizations (including nonprofit stakeholders) are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

37. Clergy are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

38. Fair housing advocates are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

39. University partners are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

40. Citizens who do not vote are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

41. Officials who represent the populous (and not business) are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

42. The Fair Housing lawsuit against HANO and the developer of River Garden forced monitoring of admissions into public housing.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

43. The rental assistance and Section 8 lawsuits changed public housing practices only temporarily.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

44. Advocacy and potential litigation influences policy by legal services.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

45. As a result of public housing policies post Katrina, “scatter sites” may exist with new apartments but large public housing units will no longer be available.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

46. As a result of public housing policies post Katrina, the city’s commitment to the poor is gone.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

47. As a result of public housing policies post Katrina, homelessness rates continue to grow.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

48. As a result of public housing policies post Katrina, housing stock is better.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

49. As a result of public housing policies post Katrina, private managers will provide better management of public housing.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

50. As a result of public housing policies post Katrina, the landscape of public housing units will be vastly different.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

51. As a result of public housing policies post Katrina, less public housing will be available.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

52. As a result of public housing policies post Katrina, mapping will not allow the same type of communities to form.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

53. Prior to the storm, deterioration of public housing units led to environmental problems including issues concerning lead, vermin, mold, substandard heating and cooling, etc.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

54. Of concern environmentally is whether public housing will be restored in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

55. Of concern environmentally is whether public housing units that are being restored will be safe and maintained.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

56. Of concern environmentally is the dumping of debris and materials from the “Big 4” demolition (as opposed to the salvage and reuse of materials).

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

57. Of concern environmentally is the lack of “green” materials in the construction of the newly planned mixed-income developments.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

58. Of concern environmentally is the lack of environmentally friendly, energy-efficient methods for the newly planned mixed-income developments.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

59. A key public health issue of concern regarding public housing in New Orleans is the displacement of public housing residents.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

60. A key public health issue of concern regarding public housing in New Orleans is the rising level of domestic violence in public housing.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

61. A key public health issue of concern regarding public housing in New Orleans is sub-standard housing units that continue to exist as in the past.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

62. A key public health issue of concern regarding public housing in New Orleans is the lack of affordable housing.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

63. A key public health issue of concern regarding public housing in New Orleans is vermin.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

64. The top concern of public housing policy in New Orleans is the resettlement of the original residents of public housing.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

65. The top concern of public housing policy in New Orleans is making housing affordable for those seeking public housing prior to hurricane Katrina.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

66. The top concern of public housing policy in New Orleans is how to maintain smaller units.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

67. The top concern of public housing policy in New Orleans is getting vacant units opened quickly.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

68. The top concern of public housing policy in New Orleans is that the economic crisis will stymie redevelopment.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

69. The top concern of public housing policy in New Orleans is returning HANO to local control out of receivership.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

70. The top concern of public housing policy in New Orleans is maintaining affordable utilities.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

71. The top concern of public housing policy in New Orleans is finding adequate funding for operational costs.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

72. The top concern of public housing policy in New Orleans is the lack of units to support the population of current and past residents who need public housing.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

73. The failure of affording the return of the original residents has been one of the high crimes against those who were displaced following Hurricane Katrina.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

74. Determining the right of people to housing, especially after disaster, is a chief issue that must be addressed following hurricane Katrina.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

75. Determining the federal and local response to homelessness and overcrowding after hurricane Katrina is a chief issue that must be addressed.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

76. The need for housing resident council elections is a chief issue that must be addressed following hurricane Katrina.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

77. Setting admission policies is a chief issue that must be addressed following hurricane Katrina.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

78. Private management of the Iberville site is a chief issue that must be addressed following hurricane Katrina.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

79. Resident employment and self-sufficiency opportunities are chief issues that must be addressed following hurricane Katrina.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

Appendix M

Thank you for your participation in this study, which seeks to gather your input regarding current and future public housing policies and practices in the New Orleans area.

This is the third and final round in this study which utilizes the Delphi method. In this round, you will see statements from the second round where consensus was not reached. Results of feedback from all key experts are listed below each statement. You have the opportunity to change any of your answers if you so choose. Also, if you find that your answer to any item is an outlier from those of other key experts and do not wish to change your response, or if you feel that you want to contribute more information on any one statement, you have the opportunity to provide support of your viewpoint in the comments section following that statement.

After this round, your answers will be analyzed one final time with those of other participants. At the end of the study, a compilation of the data will be sent to you and may be used as needed for your advocacy efforts.

This study seeks to obtain your insight, beliefs, knowledge, opinions and predictions regarding public housing in New Orleans. While your participation in this research remains confidential, it is important to note that anonymity in the Delphi approach may best be described as “quasi-anonymity” as panelists are known to the researcher and to each other, but their comments and scoring remain “strictly anonymous” (Hasson, Keeney, & McKenna, 2000, p. 1012).

Please select only one answer per question as it pertains to your opinions, beliefs, knowledge, insight or predictions regarding public housing in New Orleans. You may answer directly on this form by checking the text box of your choice. When you have completed the questionnaire, please save and email it to sunshine.cowan@okstate.edu. Thank you for your time.

- 1. An important ethical decision for public housing in New Orleans is the setting of new admission requirements for redeveloped sites such as work preferences.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐
1 1 2

Comments:

- 2. Section 8 housing is a policy that is still working well in New Orleans.**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

1 2 1

Comments:

3. Emergency rental assistance programs (run by local nonprofit organizations, not the federal government) are working well in New Orleans.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	1	2	1	

Comments:

4. Resident management corporations (RMCs) are working well in New Orleans.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	1	2	1	

Comments:

5. Of current concern in the area of public housing in New Orleans is the rebuilding of new public housing units.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
2	1		1	

Comments:

6. Of current concern in the area of public housing in New Orleans is maintaining existing public housing units.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
2	1		1	

Comments:

7. Of current concern in the area of public housing in New Orleans is the mismanagement of funds.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
1	2		1	

Comments:

8. **Of current concern in the area of public housing in New Orleans is the demolition of the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper).**

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

3 **1**

Comments:

9. Of current concern in the area of public housing in New Orleans is the focus on the “Big Four” sites (i.e. St. Bernard, C.J. Peete, Lafitte, and B.W. Cooper) at the expense of other public housing units.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

1 **1** **1** **1**

Comments:

10. The City of New Orleans is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

2 **1** **1**

Comments:

11. The New Orleans City Council is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

2 1 1

Comments:

12. Citizens of New Orleans who vote are key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree ☐

2 1 1

Comments:

13. Mayor Nagin is a key decision maker regarding the future policies and practices of public housing in New Orleans.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	2		1	1

Comments:

14. Developers are key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	2	1	1	

Comments:

15. Public housing resident leaders are key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
1	1	1	1	

Comments:

16. The receivership team is comprised of key decision makers regarding the future policies and practices of public housing in New Orleans.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	1	2	1	

Comments:

17. Officials who represent the populous (and not business) are missing from discussions or planning regarding the future policies and practices of public housing in New Orleans.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
1	2		1	

Comments:

18. The Fair Housing lawsuit against HANO and the developer of River Garden forced monitoring of admissions into public housing.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	2	1	1	

Comments:

19. Advocacy and potential litigation influences policy by legal services.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
1	1	1	1	

Comments:

20. As a result of public housing policies post Katrina, “scatter sites” may exist with new apartments but large public housing units will no longer be available.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	3		1	

Comments:

21. As a result of public housing policies post Katrina, the city’s commitment to the poor is gone.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	3		1	

Comments:

22. As a result of public housing policies post Katrina, private managers will provide better management of public housing.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	1		2	1

Comments:

23. A key public health issue of concern regarding public housing in New Orleans is the displacement of public housing residents.

Strongly Agree	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Neutral	<input type="checkbox"/>	Disagree	<input type="checkbox"/>	Strongly Disagree	<input type="checkbox"/>
2		1				1			

Comments:

24. A key public health issue of concern regarding public housing in New Orleans is the rising level of domestic violence in public housing.

Strongly Agree	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Neutral	<input type="checkbox"/>	Disagree	<input type="checkbox"/>	Strongly Disagree	<input type="checkbox"/>
		3						1	

Comments:

25. The top concern of public housing policy in New Orleans is the resettlement of the original residents of public housing.

Strongly Agree	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Neutral	<input type="checkbox"/>	Disagree	<input type="checkbox"/>	Strongly Disagree	<input type="checkbox"/>
2				1		1			

Comments:

26. The top concern of public housing policy in New Orleans is making housing affordable for those seeking public housing prior to hurricane Katrina.

Strongly Agree	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Neutral	<input type="checkbox"/>	Disagree	<input type="checkbox"/>	Strongly Disagree	<input type="checkbox"/>
1		1		1		1			

Comments:

27. The top concern of public housing policy in New Orleans is maintaining affordable utilities.

Strongly Agree	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Neutral	<input type="checkbox"/>	Disagree	<input type="checkbox"/>	Strongly Disagree	<input type="checkbox"/>
		2		1		1			

Comments:

28. Setting admission policies is a chief issue that must be addressed following hurricane Katrina.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
1	1		1	1

Comments:

29. Resident employment and self-sufficiency opportunities are chief issues that must be addressed following hurricane Katrina.

Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
	1	1		2

Comments:

VITA

Jennifer Sunshine Ponder Cowan

Candidate for the Degree of

Doctor of Philosophy

Dissertation: ENVIRONMENTAL JUSTICE AFTER HURRICANE KATRINA: A DELPHI APPROACH TO DETERMINING THE ETHICS AND FUTURE OF PUBLIC HOUSING POLICIES IN NEW ORLEANS

Major Field: Environmental Science

Biographical:

Completed the requirements for Bachelor of Science in Community Health at the University of Central Oklahoma, Edmond, Oklahoma in May, 2000.

Completed the requirements for Master of Public Health in Health Promotion Sciences at University of Oklahoma, Oklahoma City, Oklahoma in July, 2002.

Completed the requirements for Doctor of Philosophy in Environmental Science at Oklahoma State University, Stillwater, Oklahoma in July, 2009.

Experience:

University of Central Oklahoma Instructor, Community Health Program / Coordinator, Healthy Life Skills Course, Department of Kinesiology & Health Studies 2004 – present; School Health Educator / YRBS Coordinator, Oklahoma State Department of Health, Maternal & Child Health Service 2002-2004; Health Care Services, Muscular Dystrophy Association 1999-2002

Professional Memberships:

American College Health Association, Oklahoma Health Equity Committee, Oklahoma Public Health Association, Oklahoma Turning Point Council, and Oklahoma Association for Health, Physical Education Recreation and Dance.

Name: Jennifer Sunshine Ponder Cowan

Date of Degree: July, 2009

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: ENVIRONMENTAL JUSTICE AFTER HURRICANE KATRINA: A
DELPHI APPROACH TO DETERMINING THE ETHICS AND
FUTURE OF PUBLIC HOUSING POLICIES IN NEW ORLEANS

Pages in Study: 154

Candidate for the Degree of Doctor of Philosophy

Major Field: Environmental Science

Scope and Method of Study:

This study was designed to gain insight into the ongoing controversy surrounding public housing in New Orleans post Hurricane Katrina. This approach incorporated the fields of environmental science, public health and disaster management in an effort to better address environmental justice in this population. Secondary data sources from the Brookings Institution were used to determine the relevant importance of this issue. Furthermore, this study incorporated three rounds of questionnaires, using the Delphi technique, in order to examine the opinions and predictions of key experts (professionals and advocates in the fields of environmental law, public housing, disaster recovery, sociology and the like) regarding the ethics and future of public housing policies in New Orleans post Katrina.

Findings and Conclusions:

Key experts unanimously support the involvement of public housing residents in the planning stages of public housing development. Experts consider this issue ethical in nature. They also believe that the right of return for public housing residents is an important ethical consideration in New Orleans and that public housing should be provided accordingly. Respondents express shared concern as to the level that public housing will be restored in New Orleans and whether those units that are restored will be safe and maintained. Disasters occur in social systems, and often highlight the gaps that exist among populations that are vulnerable due to failing systems. By understanding the environmental injustices that have taken place following Hurricane Katrina and moving forward to both correct these policies and reduce their negative impact on populations, this study may provide insight that is transferrable, allowing other communities throughout the world to seek environmental justice as well.

ADVISER'S APPROVAL: Dr. Lowell Caneday
